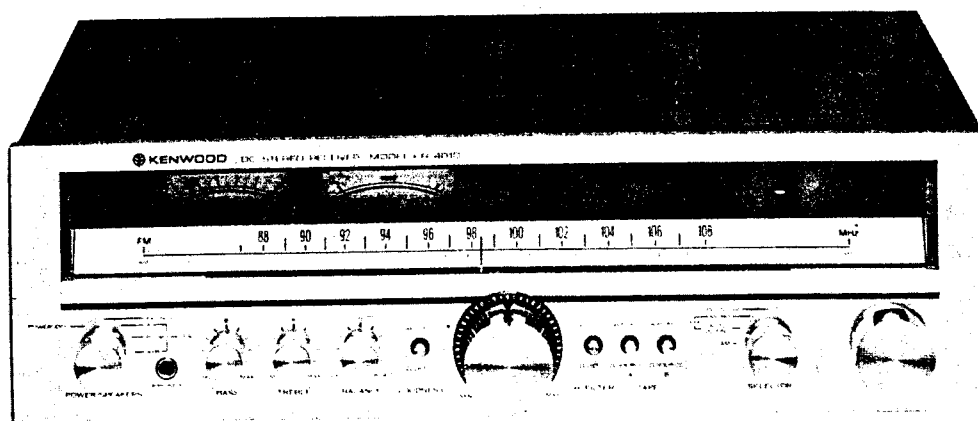


KENWOOD
HI/FI STEREO COMPONENTS

SERVICE MANUAL

KR-4010
KR-5010
(KR-5510)

An item of adjustment is written in three languages — English, French and German.
Un article sur réglages est écrit en trois langues, Anglais, Français et Allemand.
Ein Artikel der Abgleich wird auf drei Sprachen, Englische, Französisch und Deutsch geschrieben.



DC STEREO RECEIVER

CONTENTS

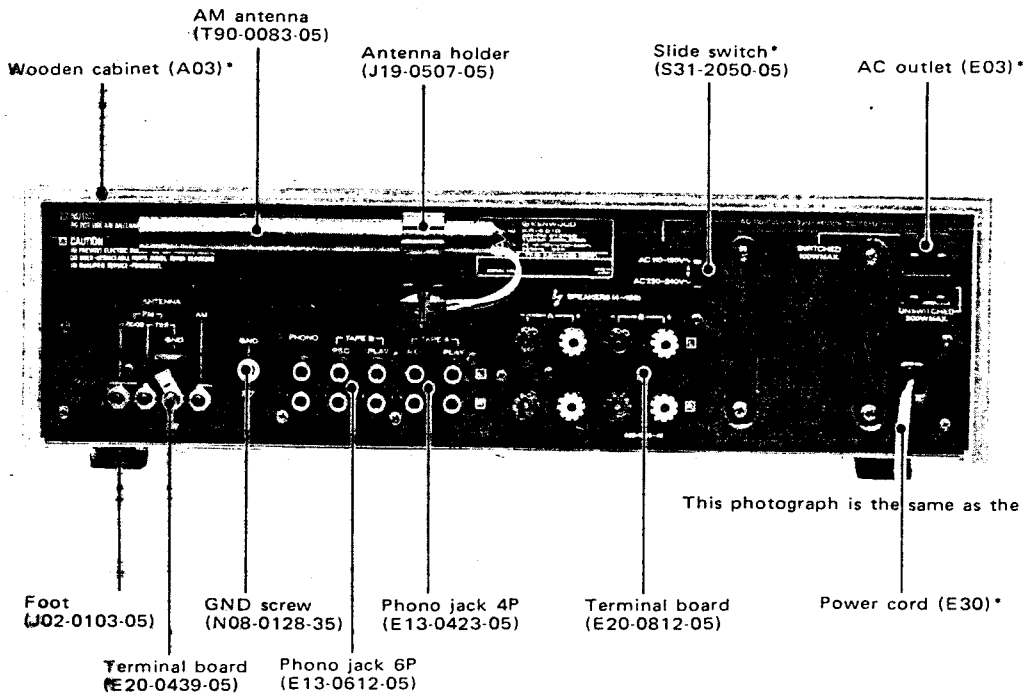
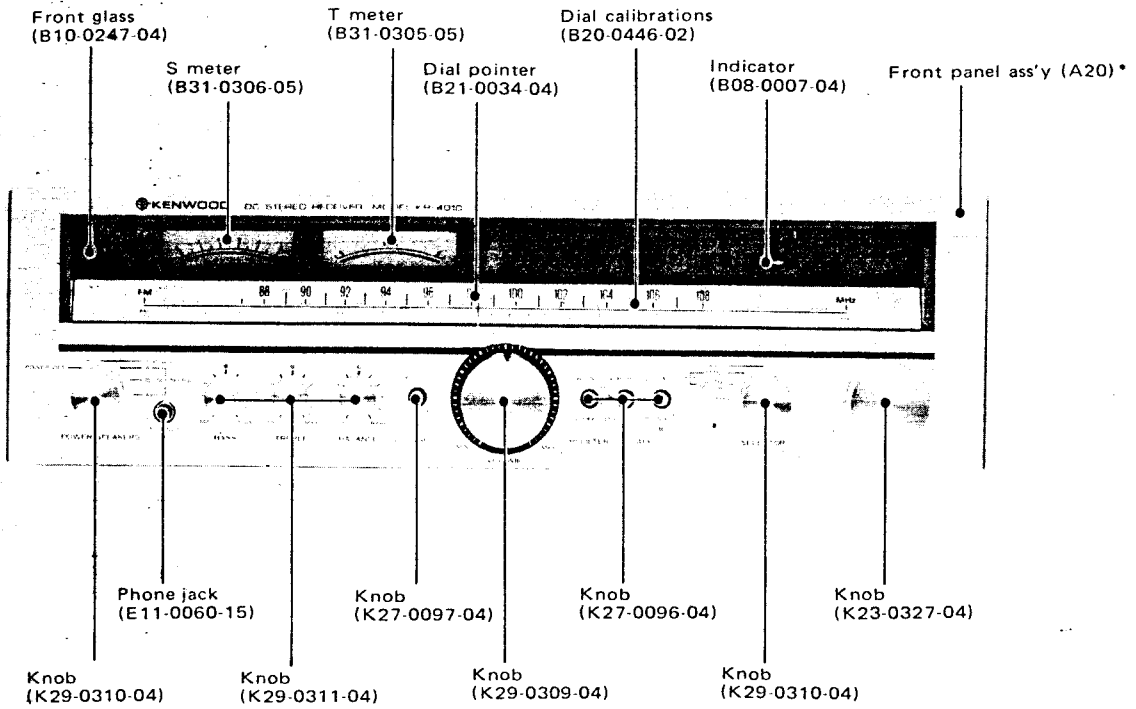
EXTERNAL VIEW (KR-4010)	3
EXTERNAL VIEW (KR-5010)	4
INTERNAL VIEW (KR-4010)	4
INTERNAL VIEW (KR-5010)	5
DIAL CORD STRINGING	5
BLOCK & LEVEL DIAGRAM	6
EXPLODED VIEW	7
ADJUSTMENT/RÉGLAGES/ABGLEICH	8
PC BOARD	13
SCHEMATIC DIAGRAM (KR-4010)	15
SCHEMATIC DIAGRAM (KR-5010)	16
PARTS LIST	17
SEMICONDUCTOR SUBSTITUTIONS	21
IC CIRCUIT SCHEMATICS	21

Note:

This manual is for the KR-4010, KR-5010 and KR-5510 (KR-5510's H type). Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

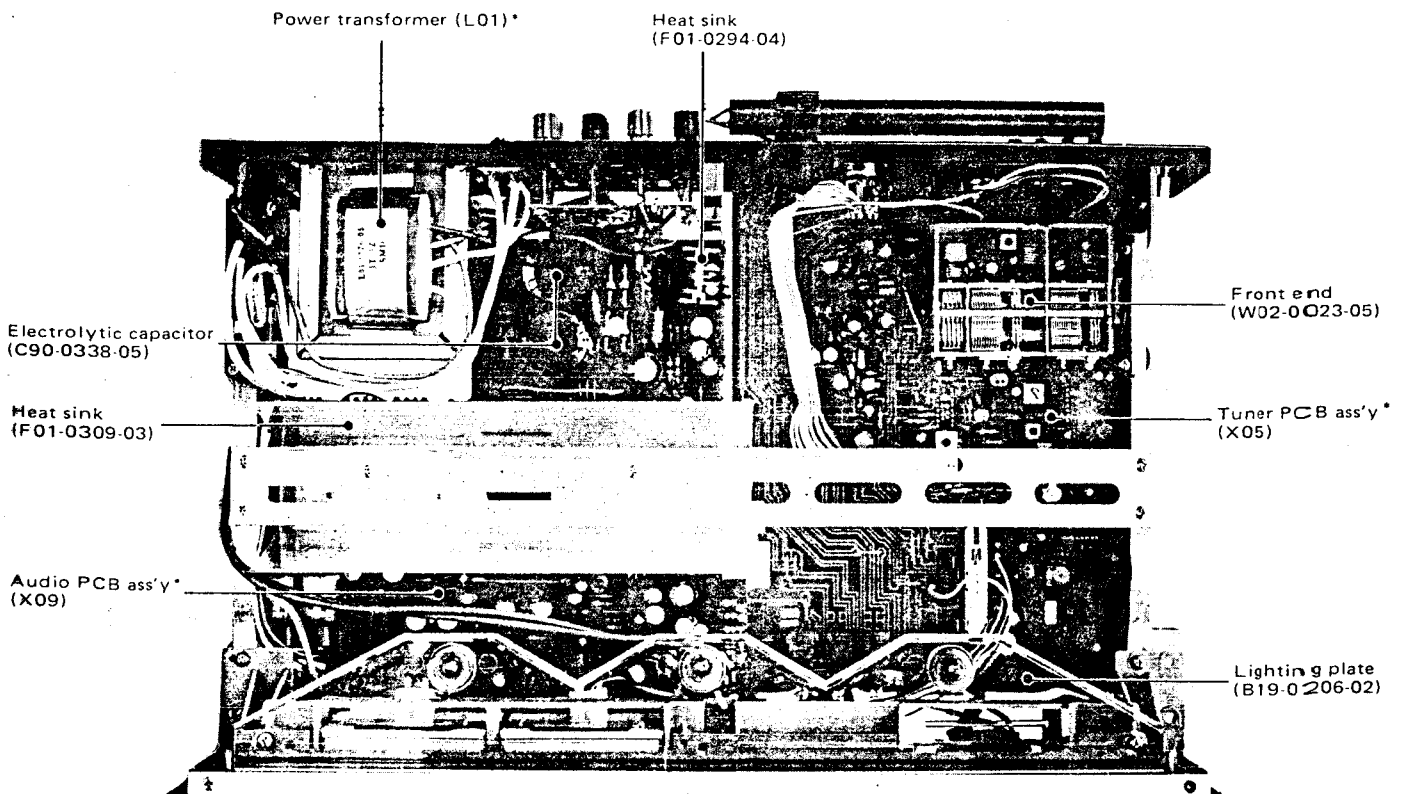
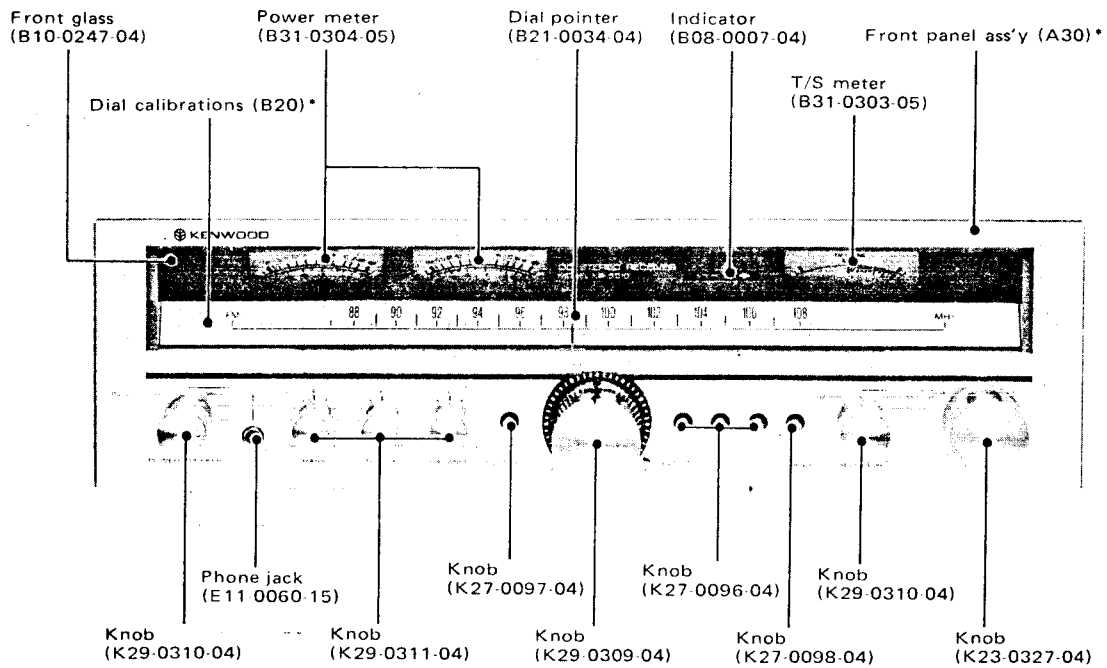
Region	Code
U.S.A.	K
Canada	P
PX	U
Australia	X
Europe & Scandinavia	E
England	T
Other Areas	M
Audio Club (KR-5510)	H

EXTERNAL VIEW (KR-4010)



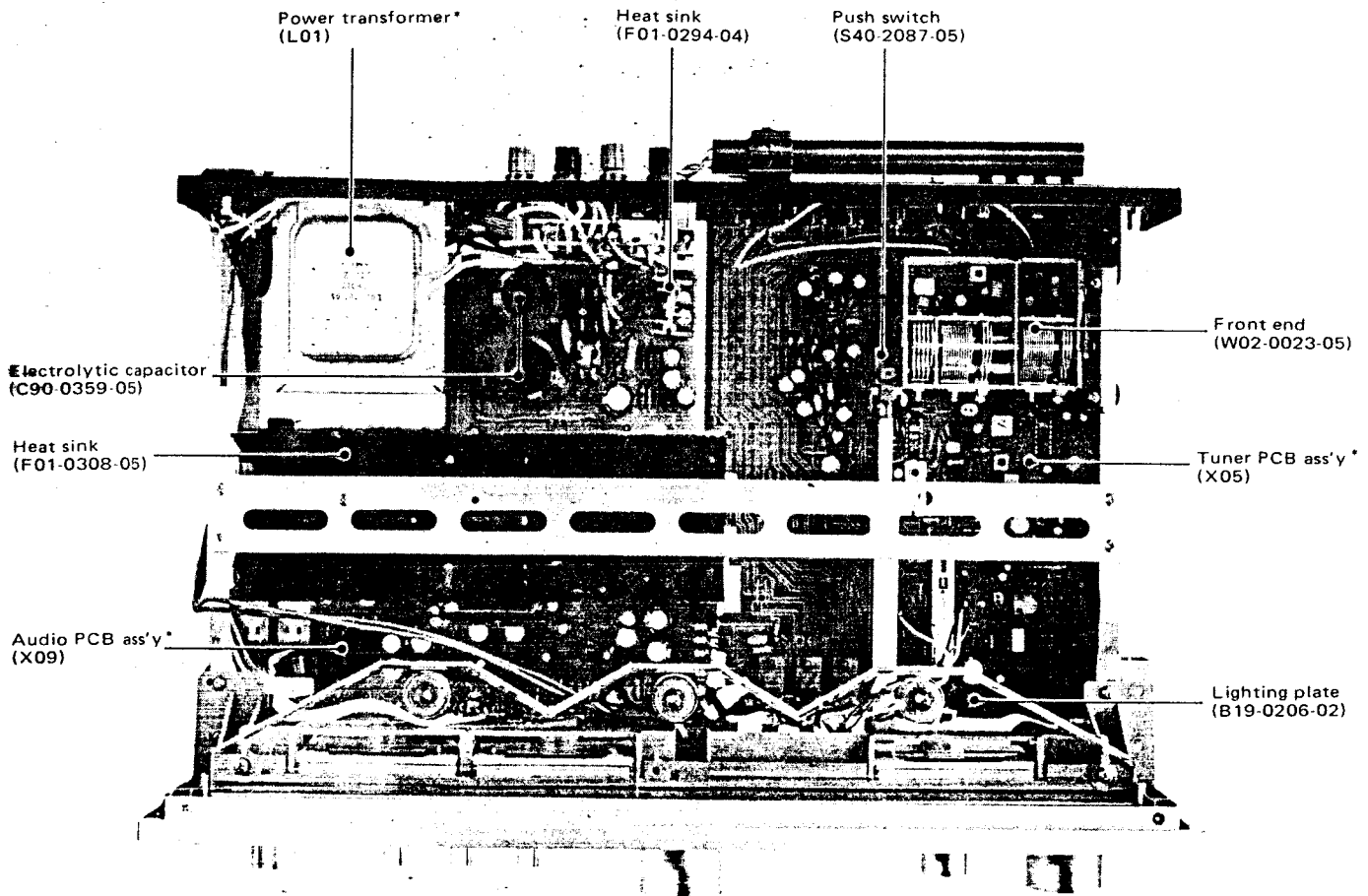
* Refer to Parts List

EXTERNAL VIEW (KR-5010)/ INTERNAL VIEW (KR-4010)



* Refer to Parts List.

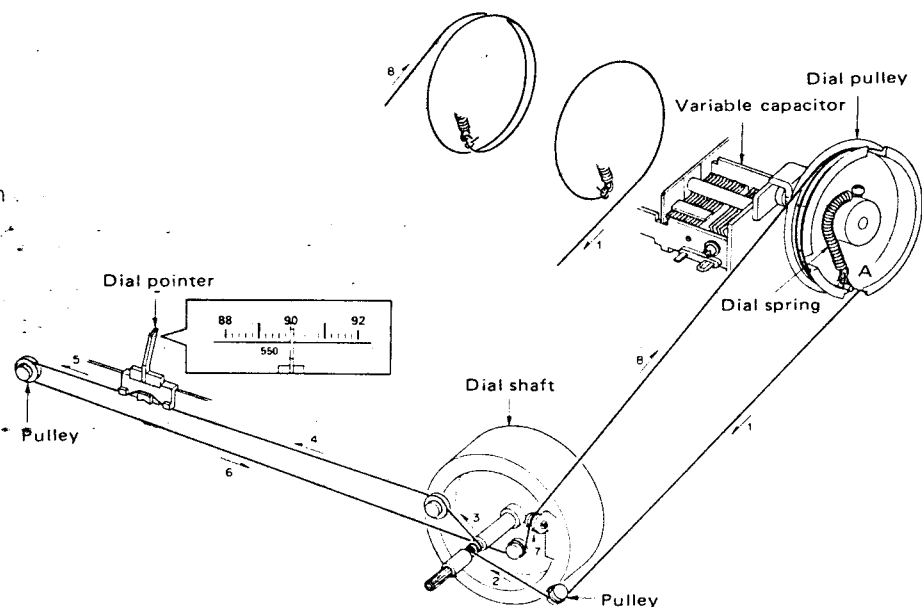
INTERNAL VIEW (KR-5010)/DIAL CORD STRINGING



* Refer to Parts List.

DIAL CORD STRINGING

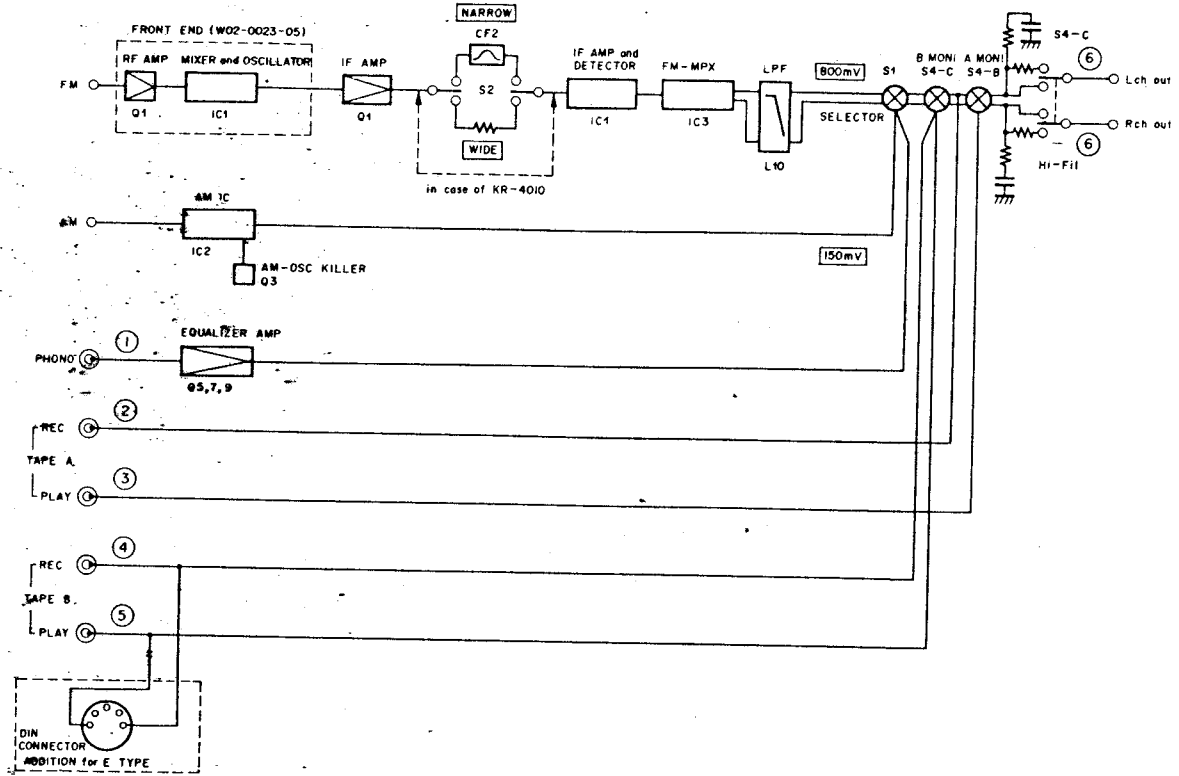
1. Set the dial pulley as illustrated.
2. Tie the dial cord to the dial spring.
3. Hook the dial spring on the boss A.
4. Dress the dial cord in the direction of "1" to "2".
5. Wind the dial cord three turns around the dial shaft starting from its upper side.
6. Dress the dial cord in the direction of "3" through "8".
7. Wind the dial cord two and a half turns around the dial pulley starting from its upper side.
8. Tie the end of the dial cord to the dial spring.
9. Remove the dial spring from the boss A.
10. Receive a 90 MHz signal, and then mount the dial pointer at the 90 MHz position of the dial calibrations.



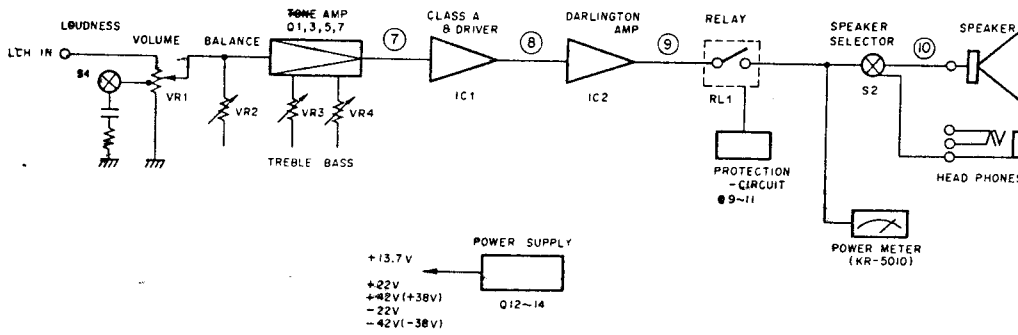
BLOCK & LEVEL DIAGRAM

BLOCK DIAGRAM

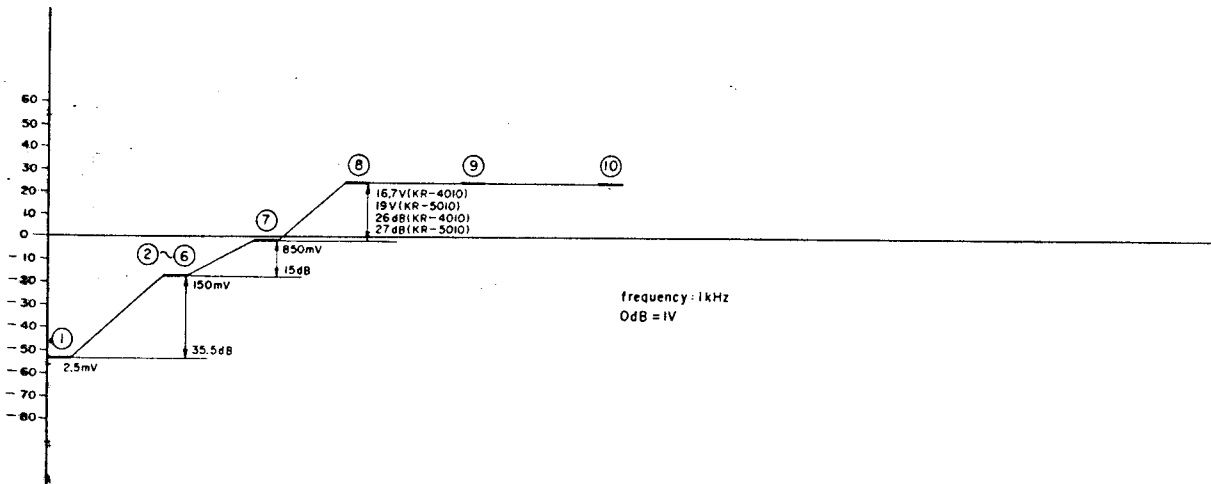
TUNER PCB ASS'Y (X05-1680-10)



AUDIO PCB ASS'Y (X09-1680-10)



LEVEL DIAGRAM

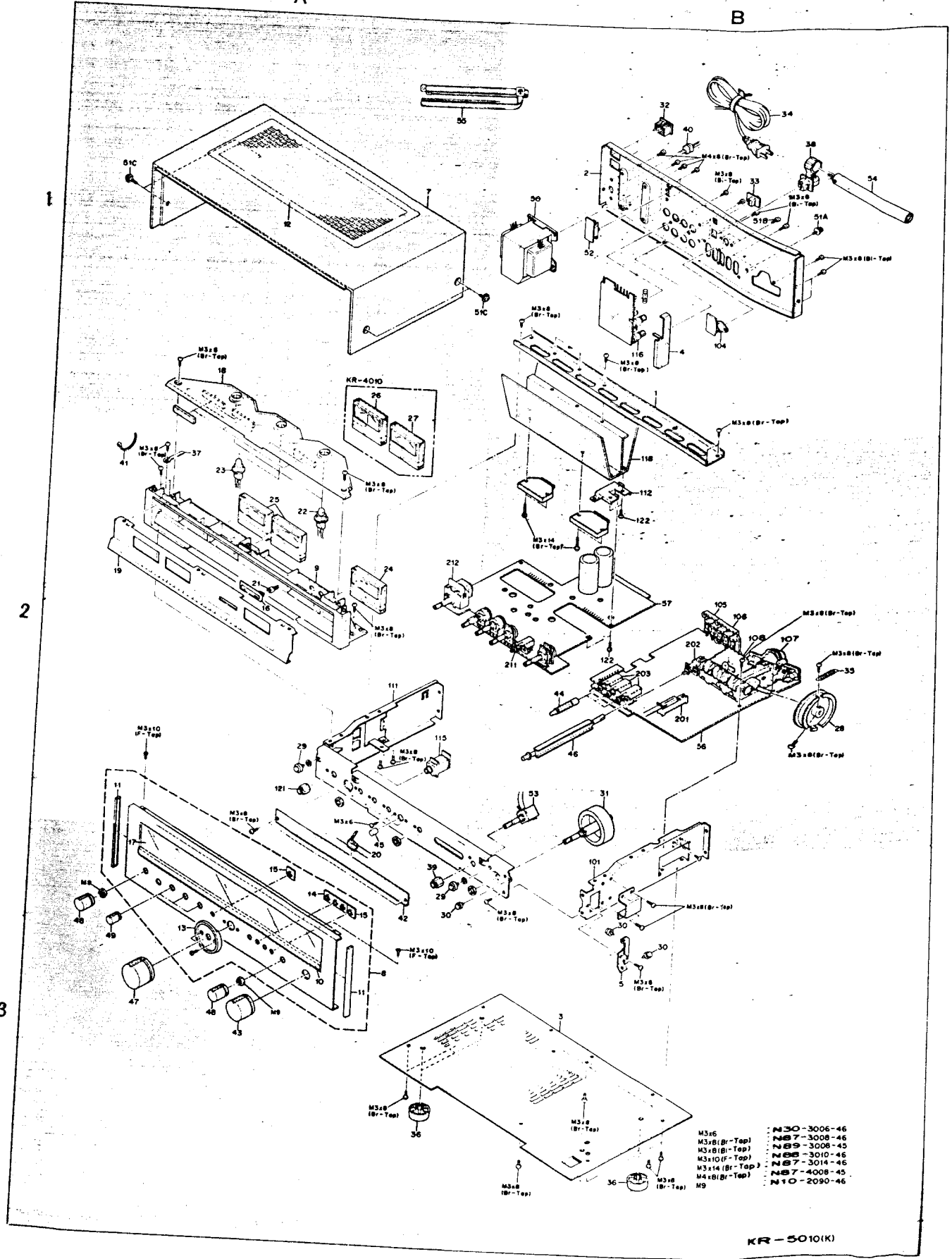


EXPLODED VIEW

See parts numbers on page 17.

A

B



- M306
- M308 (Br-Top)
- M308 (Br-Top)
- M310 (F-Top)
- M314 (Br-Top)
- M48 (Br-Top)
- M30-3006-46
- N87-3008-46
- N89-3008-45
- N88-3010-46
- N87-3014-46
- N87-4008-45
- N10-2090-46

KR-5010(K)

ADJUSTMENT/RÉGLAGES/ABGLEICH

1. OFFSET VOLTAGE

- (1) Connect a DC voltmeter between pin 23 (pin 24) of X09-1680-10 and the chassis.
- (2) Adjust VR5 (VR6) for a 0V reading of the DC voltmeter.

2. POWER METER (KR-5010)

- (1) Set the TAPE switch to A PLAY and the SPEAKERS switch to A.
- (2) Connect an AG to the TAPE A jack and a dummy load to the SPEAKERS A terminals.
- (3) Connect an AC voltmeter across the dummy load.
- (4) Set the AG to 1 kHz and for a 4.9 V reading of the AC voltmeter.
- (5) Adjust VR7 (VR8) for a 3W reading of the left power meter (right power meter).

1. TENSION DE DÉCALAGE (OFFSET)

- (1) Brancher le voltmètre de C.C. aux points d'alignement, 23 et GND (24 et GND) sur la palque circuit imprimé du ampli (X09-1680-10).
- (2) Régler le potentiomètre ajustable VR5 (VR6) de façon à ce que le voltmètre de C.C. indique 0 V.

2. VU MÈTRE (KR-5010)

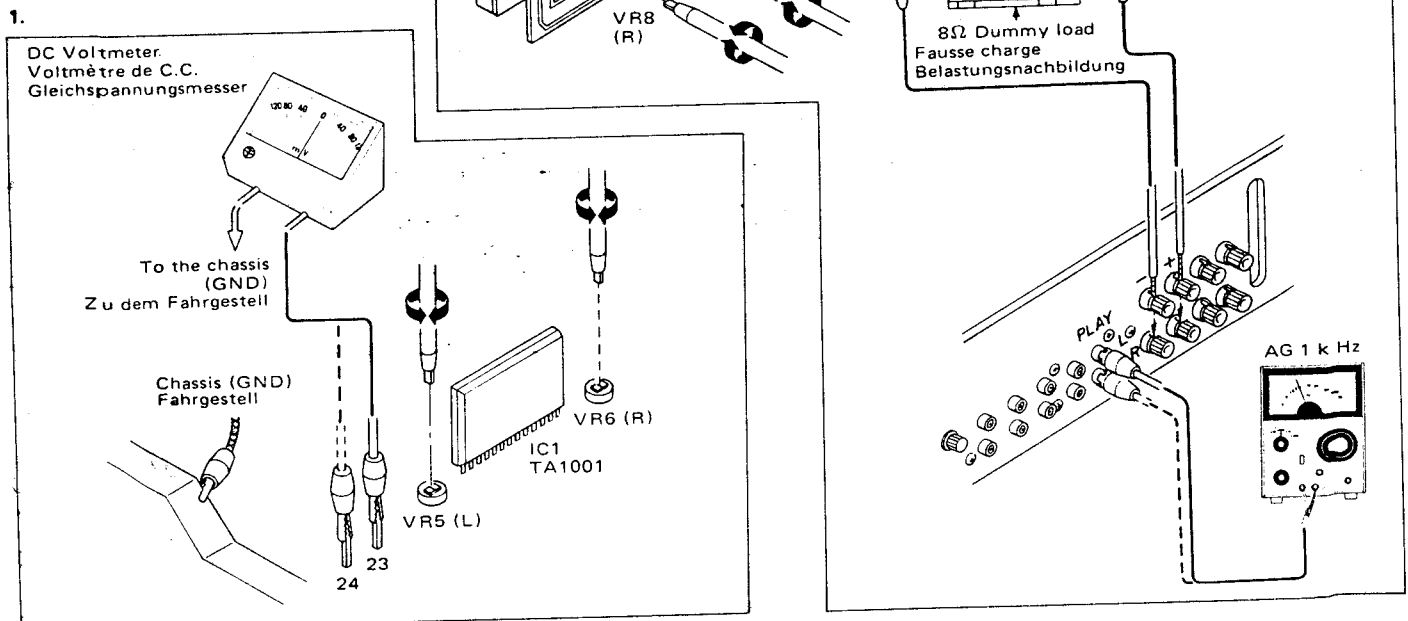
- (1) Régler TAPE interrupteur au A PLAY et SPEAKER interrupteur au A.
- (2) Relier un AG (générateur de signaux audio) sur les TAPE A et une fausse charge (résistance) sur les sortie de ampli-tuner (SPEAKER).
- (3) Relier un voltmètre de C.A. aux deux extrémités de la résistance (ou aux borne de sortie + et -).
- (4) Régler le potentiomètre ajustable VR7 (VR8) en sortie que le VU mètre indique 3W lorsque le voltmètre indique 4,9 V.

1. OFFSET-SPANNUNG

- (1) Einen Gleichspannungsmesser zwischen der Klemme 23 (Klemme 24) von X09-1680-10 und dem Fahrgestell anschließen.
- (2) Den VR5 (VR6) so regulieren, daß die Gleichspannungsmesser-Ableseung 0 V ist.

2. LEISTUNGSMESSER (KR-5010) (POWER METER)

- (1) Den Schalter TAPE auf A PLAY und den Schalter SPEAKERS auf A einstellen.
- (2) Einen AG (NF-Signalgenerator) an die Buchse TAPE A und eine Belastungsnachbildung an die Klemmen SPEAKERS A anschließen.
- (3) Einen Wechselspannungsmesser über die Belastungsnachbildung anschließen.
- (4) Den AG auf 1 kHz einstellen.
- (5) Die Lautstärkeregl. (VOLUME) oder den AG-Ausgang so einstellen, daß die Wechselspannungsmesser-Ableseung 4,9 V ist.
- (6) Den VR7 (VR8) so regulieren, daß die linke Leistungsmesser-Ableseung (rechte Leistungsmesser-Ableseung) 3 W ist.

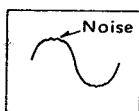


ADJUSTMENT

NO.	ALIGNMENT	TEST EQUIPMENTS		RECEIVER SETTING	OUTPUT INDICATOR	ADJUSTMENT POINTS	REMARKS
		CONNECTION	SETTING				
FM							
1	DISCRIMINATOR (1)	A	95MHz 1kHz, ± 75 kHz Dev	95MHz	B	—	* 1
2	DISCRIMINATOR (2)	ditto	95MHz 1kHz, ± 75 kHz Dev 60dB (Receiver input)	ditto	T meter	L2	T meter pointer to be center.
3	DISCRIMINATOR (3)	ditto	ditto	ditto	B	L3	Minimum distortion
Repeat alignments "1 ~ 3" several times.							
4	VCO	A	95MHz 0 Dev 60dB (Receiver input)	95MHz	Frequency counter to the crosspoint of R33 and VR1	VR1	76kHz ± 200 Hz
5	SEPARATION	C	95MHz * 2 1kHz, ± 68.25 kHz Dev SELECTOR: L or R 60dB (Receiver input)	ditto	B'	VR2	* 3
6	IFT	ditto	95MHz 1kHz, ± 68.25 kHz Dev SELECTOR: L+R 60dB (Receiver input)	ditto	ditto	T1 (W02-0023-05)	Minimum distortion
AM							
1	IFT	D	1,000kHz 400Hz, 30% Mod	1,000kHz	B	L6	Maximum deflection
2	TRACKING (1)	ditto	600kHz 400Hz, 30% Mod	600kHz	ditto	L5 Bar antenna	ditto
3	TRACKING (2)	ditto	1,400kHz 400Hz, 30% Mod	1,400kHz	ditto	TC1, TC2 (W02-0023-05)	ditto

* 1

Adjust the tuning knob so that the same amount of noise is observed at the top and bottom of the output waveform with a weak signal.



* 2

Set deviation to ± 68.25 kHz with selector in L+R position.
Set deviation of pilot signal to 6.75 kHz (9%)

* 3 Minimum output

A compromise adjustment may be required if left-to-right and right-to-left separations are unequal.

* 4 FM front end

The FM front end section is completely adjusted in the factory and further adjustment is not necessary. When the transistor and/or FET are replaced, perform the following adjustment.

- (1) Set FM-SG to 108 MHz, 1 kHz Mod, ± 75 kHz Dev and connect it to the antenna terminal of the receiver.
- (2) Set the dial pointer at 108 MHz.
- (3) Adjust TC3 so that T meter gives a mid-scale reading.
- (4) Adjust TCA and TCR so that S meter deflects maximum.

When the FM front end section cannot be repaired by replacing semiconductors and taking steps in "(1)~(4)", replace the front end PCB ass'y (W02-0023-05) and do the following.

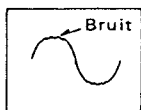
- (1) Set FM-SG to 90 MHz, 1 kHz Mod, ± 75 kHz, 60 dB and connect it to the antenna terminal of the receiver.
- (2) Receive the FM-SG signal.
- (3) Fix the dial pointer at 90 MHz.

RÉGLAGES

N°	ALIGNEMENT	APPAREILLAGE		RÉGLAGE DU AMPLI-TUNER	INDICATEUR DE SORTIE	POINTS DE RÉGLAGES	REMARQUES
		RACCORDEMENT	RÉGLAGE				
SECTION MF							
1	DISCRIMINATEUR (1)	A	95MHz 1kHz (MOD) ±75kHz (DÉV)	95MHz	B	-	* 1
2	DISCRIMINATEUR (2)	idem	95MHz 1kHz (MOD) ±75kHz (DÉV) 60dB (Niveau d'entrée du ampli-tuner)	idem	Indicateur à zéro central	L2	Aiguille de l'indicateur à zéro central en position centrale.
3	DISCRIMINATEUR (3)	idem	idem	idem	B	L3	Distorsion minimale
Repéter les points 1 ~ 3 plusieurs fois.							
4	OSCILLATEUR 76kHz	A	95MHz 0 (DÉV) 60 dB	95MHz	Relier le compteur de fréquence au plot R33 et VR1	VR1	76kHz ±200Hz
5	SÉPARATION	C	95MHz *2 1kHz (MOD) ±68,25kHz (DÉV) L ou R (SELECTION) 60dB	idem	B	VR2	* 3
6	TFI	idem	95MHz 1kHz (MOD) ±68,25kHz (DÉV) L+R (SELECTION) 60dB	idem	idem	T1 (W02-0023-05)	Distorsion minimale
SECTION MA							
1	TFI	D	1.000kHz 400Hz, 30% (MOD)	1.000kHz	B	L6	Déviaton maximale
2	ALIGNEMENT	idem	600kHz 400Hz, 30% (MOD)	600kHz	idem	L5 Antenne ferrite MA	idem
3	ALIGNEMENT	idem	1.400kHz 400Hz, 30% (MOD)	1.400kHz	idem	TC1, TC2 (W02-0023-05)	idem

*** 1**

Ajuster le bouton d'accord de façon que la même quantité de bruit puisse être observé au sommet et en bas de la forme d'onde de sortie sous des conditions d'alimentation de signal faible.



*** 2**

Régler la déviation à ±68,25 kHz avec le sélecteur en position L+R (gauche + droite). Régler la déviation du signal pilote à 6,75 kHz (9%).

*** 3 Sortie minimale**

Si la sortie la droite de diaphonie et la gauche ne sont pas même régler le potentiomètre ajustable pour que la tension de sortie est même.

*** 4 Partie frontale FM**

La partie frontale FM a été parfaitement réglée en usine et aucun réglage supplémentaire n'est requis.

Si l'on remplace le transistor et/ou FET, il convient d'effectuer le réglage suivant:

- (1) Régler FM-SG sur 108 MHz, 1 kHz Mod, ±75 kHz Dev et le connecter à la borne d'antenne du ampli-tuner.
- (2) Régler l'aiguille du cadran à 108 MHz.
- (3) Ajuster TC3 de façon que l'indicateur à zéro central donne une lecture à mi-échelle.
- (4) Ajuster TCA et TCR de façon que l'indicateur de champ devie au maximum.

Si la partie frontale FM ne peut pas être réparée en remplaçant les semi-conducteurs et en procédant suivant les indications dans (1) ~ (4), remplacer l'assemblage PCB de la partie frontale (W02-0023-05) et effectuer les opérations suivantes:

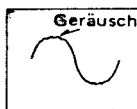
- (1) Régler FM-SG à 90 MHz, 1 kHz Mod, ±75 kHz 60 dB et le connecter à la borne d'antenne du récepteur.
- (2) Recevoir le signal FM-SG.
- (3) Fixer l'aiguille du cadran à 90 MHz.

ABGLEICH

NR.	ABGLEICH	PRÜFEINRICHTUNG		STEUERGERÄT EINSTELLUNG	AUSGANGS- ANZEIGE	EINSTELL- PUNKT	BEMER- KUNGEN
		ANSCHLÜSSE	EINSTELLUNG				
UKW-EMPFANGSABTEILUNG							
1	DISKRIMI- NATOR (1)	(A)	95MHz 1kHz, ±75kHz Hub	95MHz	(B)	—	* 1
2	DISKRIMI- NATOR (2)	dito	95MHz 1kHz, ±75kHz Hub 60dB (Steuergerät- Eingangsspegel)	dito	Kanalmitten- Anzeiger	L2	Den zeiger des Kanalmitten- Anzeiger mittig einstellen.
3	DISKRIMI- NATOR (3)	dito	dito	dito	(B)	L3	Minimaler klirrfaktor
Abstimmungen "1 bis 3" mehrere Male wiederholen.							
4	SPANNUNGS- GEREGELTER OSZILLATOR	(A)	95MHz 0 Hub 60dB	95MHz	Frequenzzähler zum Kreuzungs- Punkt von R33 und VR1	VR1	76 kHz ±200 Hz
5	STEREO KANAL TRENNUNG	(C)	95MHz * 2 1kHz, ±68,25kHz Hub Wähler: L oder R 60dB	dito	(B)	VR2	* 3
6	ZF-T	dito	95MHz 1kHz, ±68,25kHz Hub Wähler: L+R 60dB	dito	dito	T1 (W02-0023-05)	Minimaler Klirrfaktor
MW-EMPFANGSABTEILUNG							
1	ZF-T	(D)	1.000kHz 400Hz, 30%Mod	1.000kHz	(B)	L6	MAximaler Ausschlag
2	EMPFANGS- BEREICH (1)	dito	600kHz 400Hz, 30% Mod	600kHz	dito	L5 MW- Ferritantenna	dito
3	EMPFANGS- BEREICH (2)	dito	1.400kHz 400Hz, 30% Mod	1.400kHz	dito	TC1, TC2 (W02-0023-05)	dito

* 1

Den Abstimmpknopf so einstellen, daß an der oberen und unteren Grenze der Ausgangswellenform bei schwachem Signal dasselbe Geräusch auftritt.



* 2

Hub mit dem Wahlschalter auf L+R auf 68,25 kHz einstellen.
Hub des Kontrollsignals auf 6,75 kHz (9%) einstellen.

* 3 Minimaler Ausschlag

Wenn dem Übersprechanteil des linken Kanals in den rechten Kanal und dem Übersprechanteil des rechten Kanals in den linken Kanal ungleich sind eine kompromißabgleichung wird gefordert.

* 4 UKW-Frontende

Das UKW-Frontende wird bereits im Werk vollständig eingestellt. Weitere Einstellung ist daher nicht nötig. Beim Auswechseln des Transistors und/oder des FETs die Einstellung wie folgt vornehmen.

- (1) Den UKW-Signalgenerator auf 108 MHz, 1 kHz Modulation und ±75 kHz Hub einstellen und mit der Antennenklemme des Steuergeräts verbinden.
- (2) Den Skalenzeiger auf 108 MHz stellen.
- (3) TC3 so einstellen, daß der Kanalmitten-anzeiger in der Mitte ausschlägt.
- (4) TCA und TCR so einstellen, daß das Feldstärkeinstrument das Maximum anzeigt.

Wenn das UKW-Frontende durch Auswechseln der Halbleiter und/oder durch in Abschnitt "1 ~ 4" genannten Schritte nicht repariert werden kann, ist die Leiterplatte (W020023-05) des Frontendes auszuschleifen und folgende Einstellung vorzunehmen:

- (1) Den UKW-Signalgenerator auf 90 MHz, 1 kHz Modulation ±75 kHz Hub, und 60 dB einstellen und mit der Antennenklemme des Steuergeräts verbinden.
- (2) Den Steuergeräts so einstellen, daß das Meßsignal empfangen wird, während der Skalenzeiger auf 90 MHz zeigt.

ADJUSTMENT/RÉGLAGES/ABGLEICH

TEST INSTRUMENTS

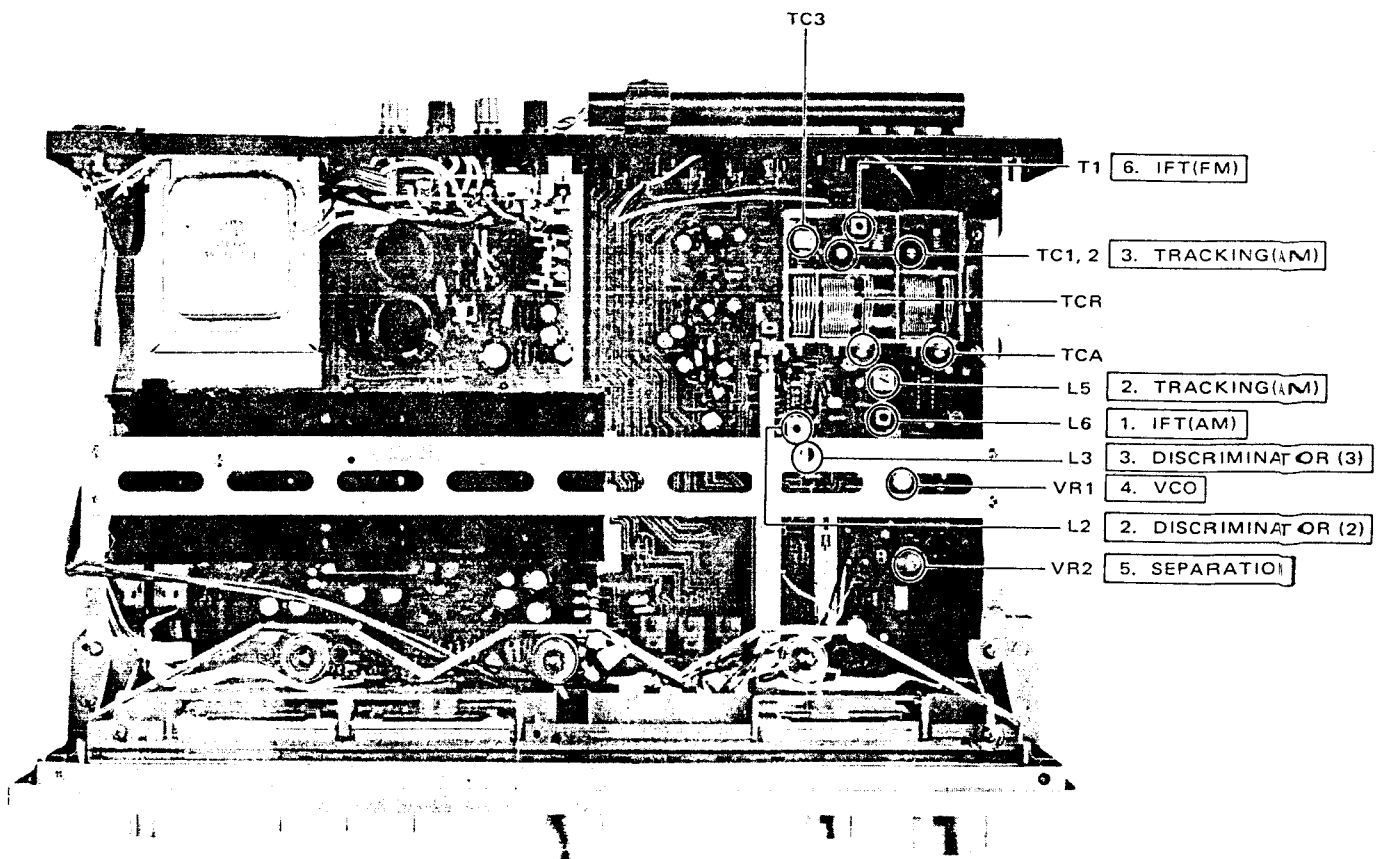
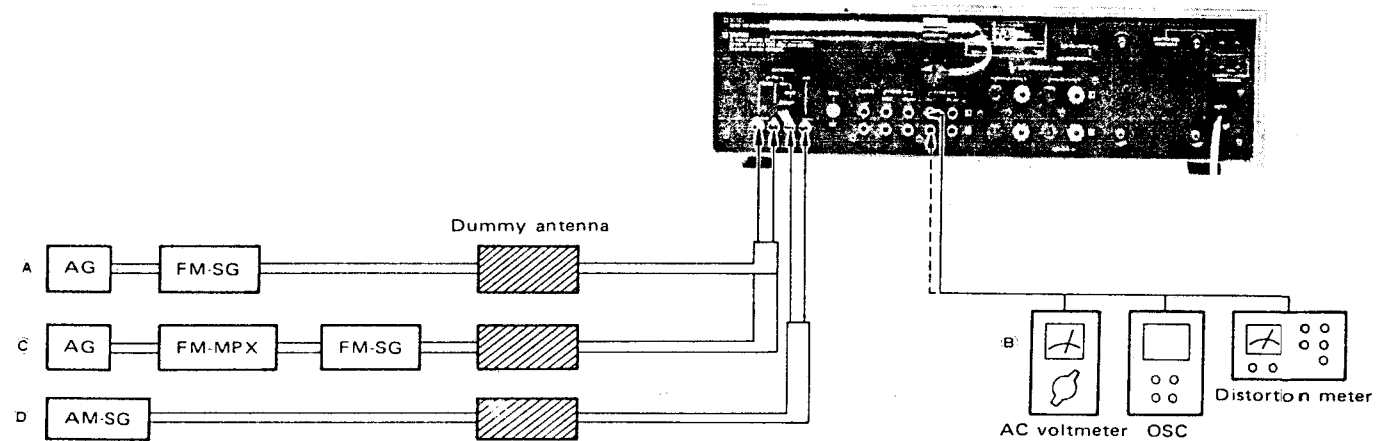
Oscilloscope
 AM signal generator
 FM signal generator
 Audio generator
 AC voltmeter
 FM multiplex generator
 Frequency counter
 DC voltmeter
 Distortion meter
 Dummy antenna

APPAREILLAGE

Oscilloscope
 Générateur MA
 Générateur MF
 Générateur audio fréquences
 Voltmètre CA
 Générateur multiplex stéréo
 Fréquence-mètre
 Voltmètre CC
 Distorsiomètre
 Antenne fictive

PRÜFINSTRUMENTE

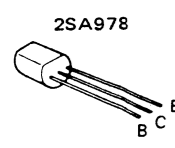
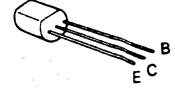
Oszilloskop
 MW-Signalgenerator
 UKW-Signalgenerator
 NF-Signalgenerator
 Wechselspannungsmesser
 UKW-Multiplexgenerator
 Frequenzzähler
 Gleichspannungsmesser
 Klirrfaktormesser
 Antennennachbildung



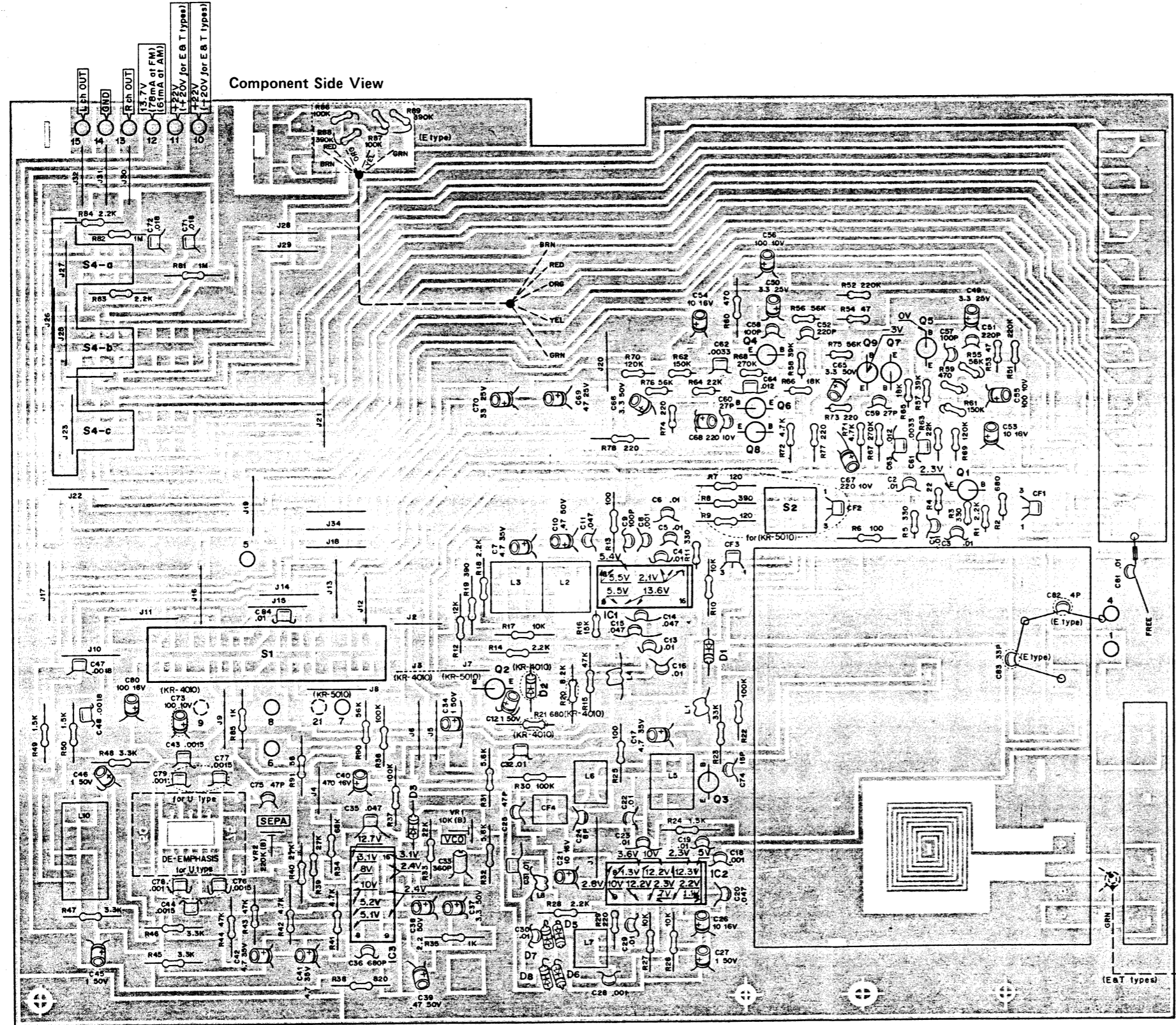
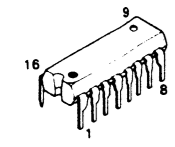
PC BOARD

TUNER (X05-1680-10)

- 2SC945
- 2SC1675
- 2SC1678
- 2SC1775
- 2SC1775A



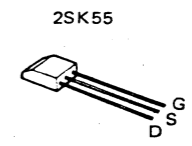
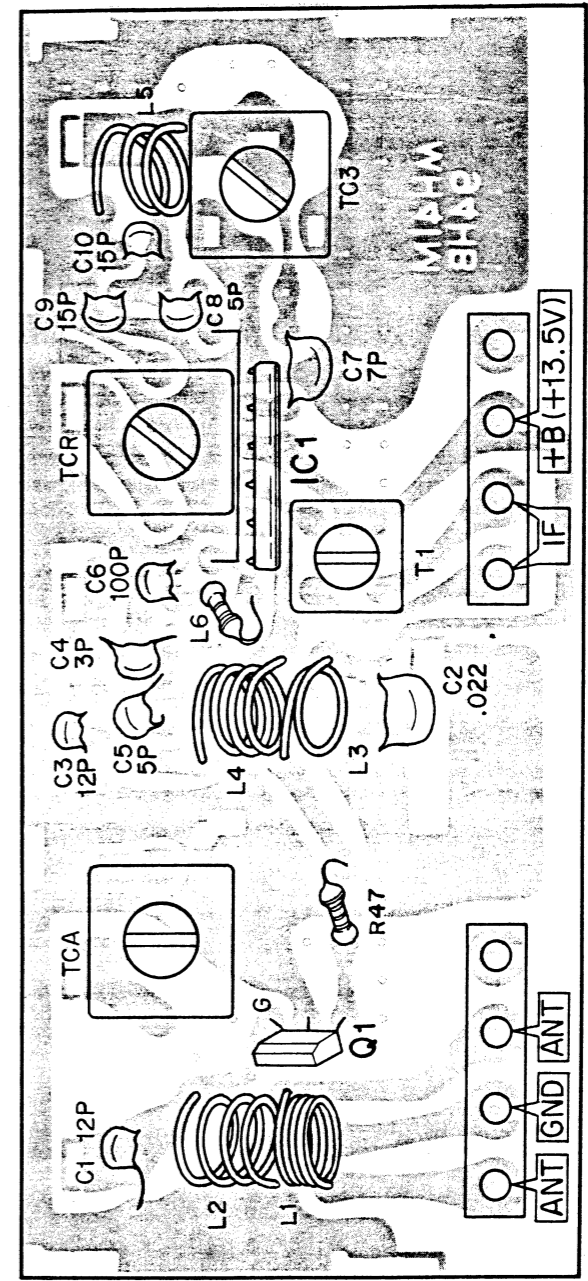
- HA1137W
- HA1197
- HA1196



PC BOARD

FRONT END (W02-0023-05)

Component Side View

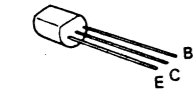


Q1:2SC1675(L,K), Q2,3,6,7:2SC945(R,Q) or 2SD767(Q,R), Q4,5:2SA978(E,F), Q8,9:2SC1775(E,F) or 2SC1775A(E,F) IC1:HA1137W
 IC2:HA1197 or LA1240, IC3:HA1196, D1,3,5~8:1S1555 or 1S2076 D2 (KR-4010): 1S1555

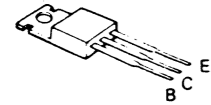
PC BOARD

AUDIO (X09-1360-10)

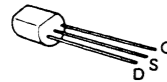
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 2SA872A 2SC1845
 2SA954 2SC2003
 2SA1775 2SD767
 2SA1775A



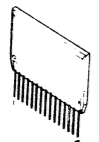
2SD330
 2SD762



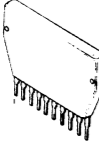
2SK136
 2SK163



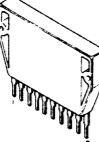
TA-1001



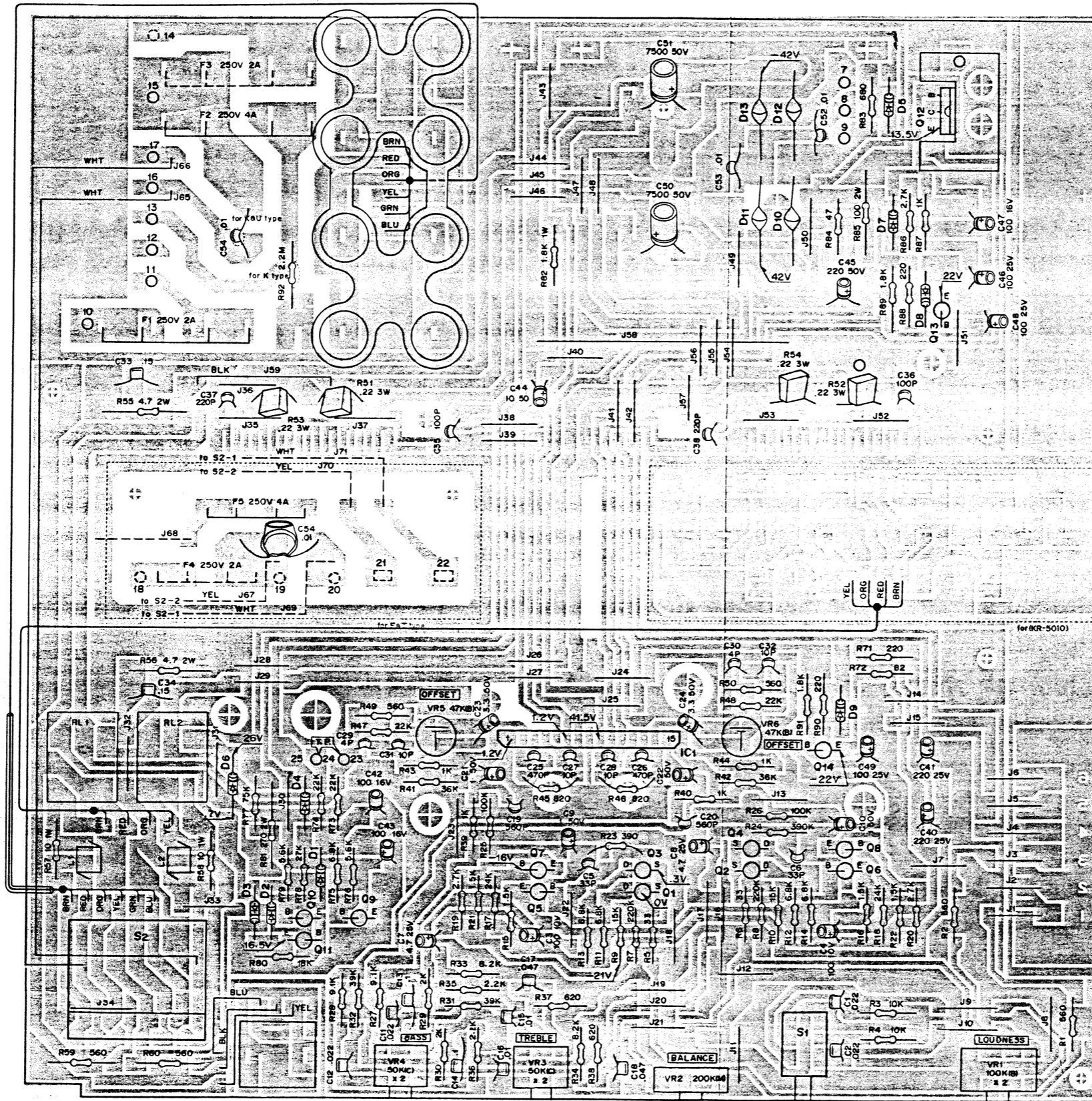
STK0040AT



STK0050AT

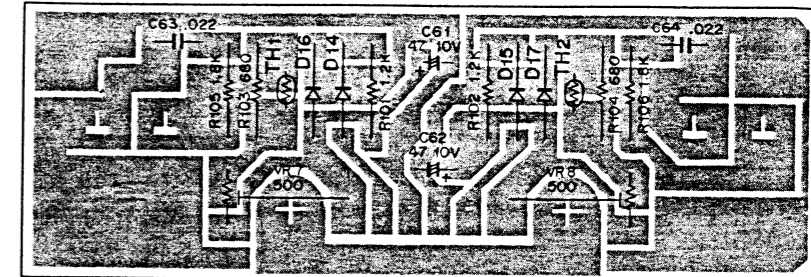


Component Side View



PC BOARD

Foil Side View



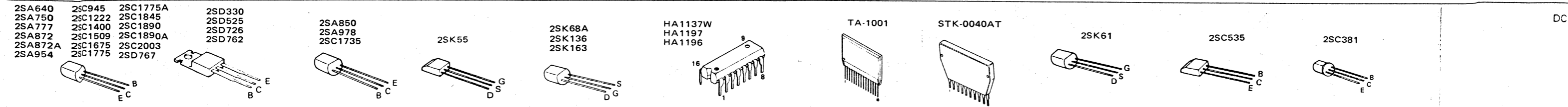
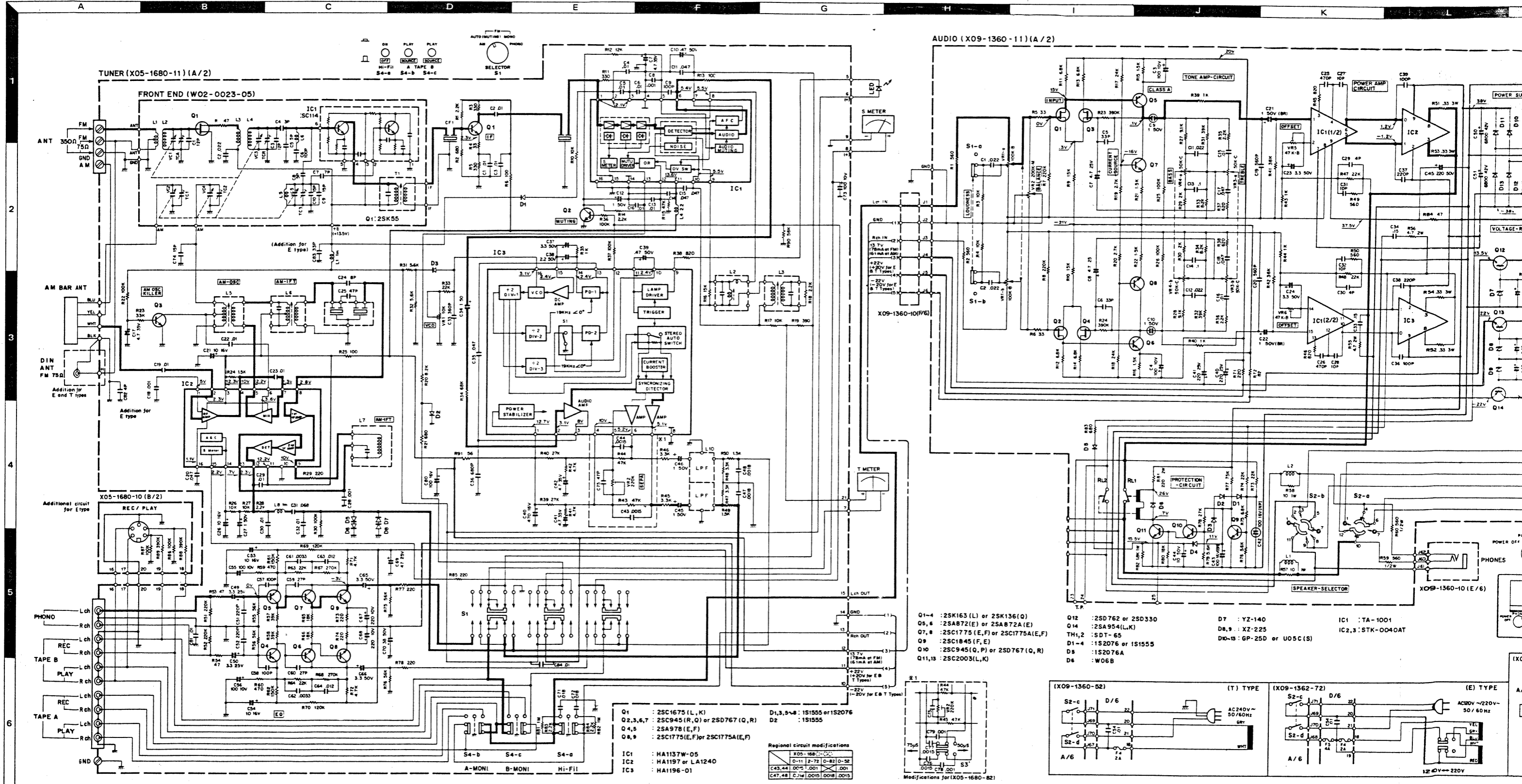
(KR-5010)

This PC board drawing is based on X09-1360-10.

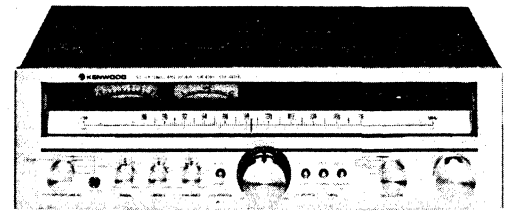
*Circuit modifications

- | | | | |
|---|-----------------------------------|------------|-------------|
| 1 | C50, 51 | 7500μF 50V | KR-5010 |
| | | 6800μF 42V | KR-4010 |
| 2 | R51~54 | 0.22Ω 3W | KR-5010 |
| | | 0.33Ω 3W | KR-4010 |
| 3 | R88, 90 | 220Ω 1/4W | KR-5010 |
| | | 100Ω 1/4W | KR-4010 |
| 4 | R89, 91 | 1.8kΩ 1/2W | KR-5010 |
| | | 1.5kΩ 1/2W | KR-4010 |
| 5 | R85 | 100Ω 2W | K & U types |
| | | 56Ω 1W | T & E types |
| 6 | R81 | 270Ω 2W | KR-5010 |
| | | 220Ω 2W | KR-4010 |
| 7 | R92 | for K type | |
| 8 | Meter amp section is for KR-5010. | | |

- Q1~4 : 2SK163(L) or 2SK136(Q)
 Q5,6 : 2SA872(E) or 2SA872A(E)
 Q7,8 : 2SC1775(E,F) or 2SC1775A(E,F)
 Q9 : 2SC1845(F,E)
 Q10 : 2SC945(Q,P) or 2SD767(Q,R)
 Q11,13 : 2SC2003(L,K)
 Q12 : 2SD762 or 2SD330
 Q14 : 2SA954(L,K)
 TH1,2 : SDT-65
 D1~4 : 1S2076 or 1S1555
 D5 : 1S2076A
 D6 : W06B
 D : YZ-140
 D8,9 : XZ-225
 D10~13: GP-25D or U05C(S)
 IC1 : TA-1001
 IC2,3 : STK-0040AT (KR-4010)
 STK-0050AT (KR-5010)



KR-4010



AMPLIFIER SECTION

Power Output

35 watts* per channel, minimum RMS at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion.

Both Channels Driven	40 + 40 watts 8 ohms at 1,000 Hz
	45 + 45 watts 4 ohms at 1,000 Hz
Dynamic Power Output	150 watts 4 ohms
Total Harmonic Distortion	0.03% at rated power into 8 ohms
	0.009% at 1/2 rated power into 8 ohms
Intermodulation Distortion	0.02% at rated power into 8 ohms
	(60 Hz : 7 kHz = 4 : 1)
Power Bandwidth	7 Hz to 35,000 Hz
Damping Factor	28 at 8 ohms
Speaker Impedance	Accept 4 ohms to 16 ohms
Input Sensitivity/Impedance/Signal to Noise Ratio (IHF A Curve)	
Phono	2.5 mV/50 kohms/11 dB
Tape	150 mV/50 kohms/104 dB
Maximum Input Level for Phono	140 mV (rms), T.H.D. 0.03% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	150 mV/300 ohms
(DIN)	30 mV/80 kohms
Frequency Response	
Phono	RIIA standard curve(20Hz to 20kHz) ± 0.3dB
Tape	5 Hz to 170,000 Hz + 0.5 dB, - 3.0 dB
Tone Control	
Bass	± 8 dB at 100 Hz
Treble	± 8 dB at 10,000 Hz
Loudness Control (- 30 dB)	± 10 dB at 100 Hz
High Filter	- 3 dB at 3 kHz

FM TUNER SECTION (IHF)

Usable Sensitivity	10.3 dBf (1.8µV)
50 dB Quieting Sensitivity	
(Mono)	16.1 dBf (3.5µV)
(Stereo)	37.9 dBf (43µV)
Signal to Noise Ratio at 65 dBf	
(Mono)	76 dB
(Stereo)	70 dB (72 dB at 85 dBf)
T.H. Distortion at 65 dBf	
(Mono)	0.08%
(Stereo)	0.09%
Frequency Response	30 Hz to 15,000 Hz ± 0.5 dB, - 2.0 dB
Capture Ratio	1.0 dB
Alternate Channel Selectivity	50 dB
Spurious Response Ratio	80 dB
Image Response Ratio	53 dB
IF Response Ratio (Balanced)	90 dB
AM Suppression Ratio	65 dB (at 65 dBf)
Stereo Separation	48 dB at 1,000 Hz
	40 dB at 100 Hz to 0.000 Hz
Sub Carrier Product Ratio	50 dB
Antenna Impedance	300 ohms and 75 ohms
FM Frequency Range	88 MHz to 108 MHz

AM TUNER SECTION

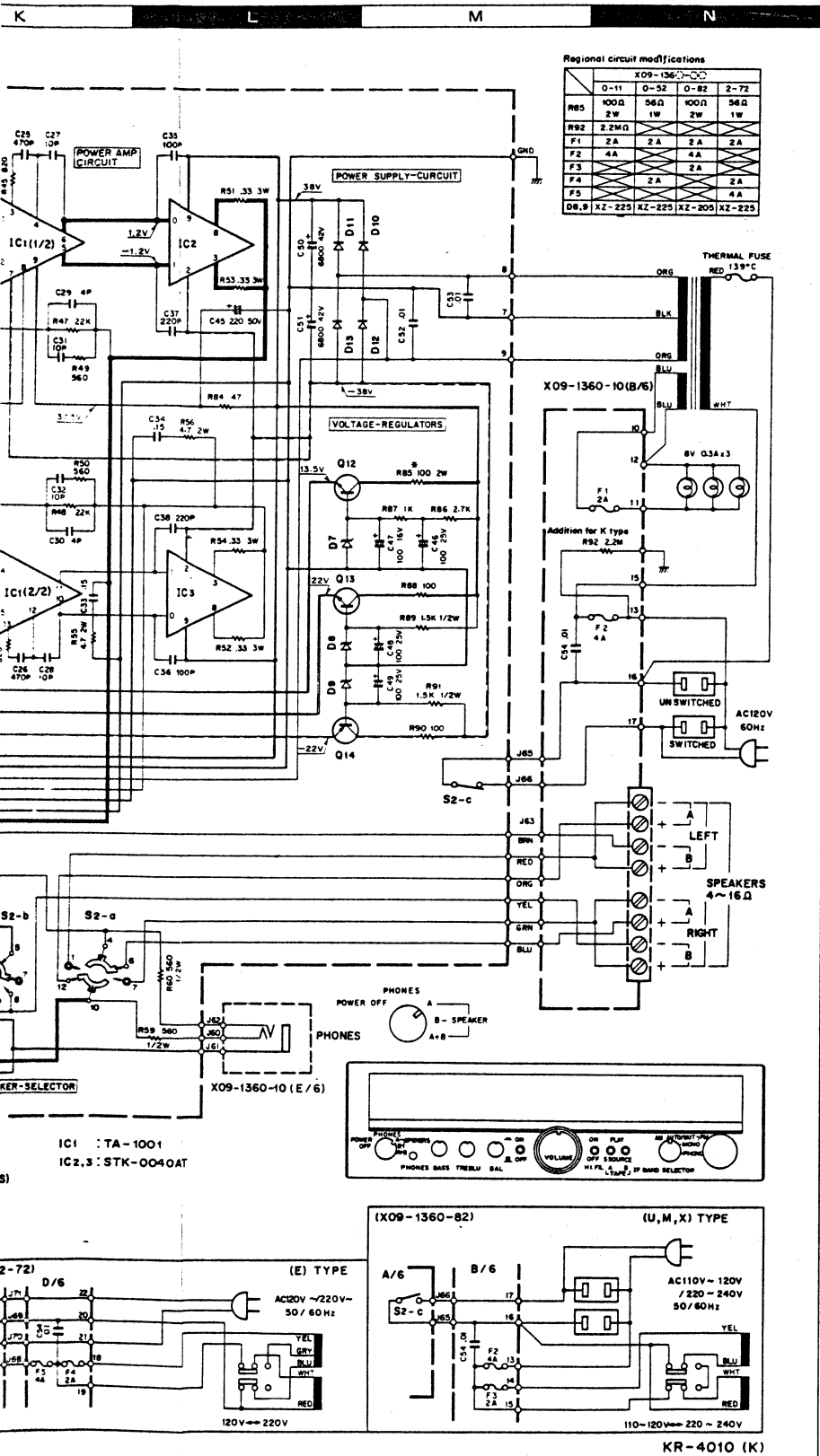
Usable Sensitivity	10 µV
Signal to Noise Ratio	52 dB
Image Rejection	50 dB
Selectivity	50 dB

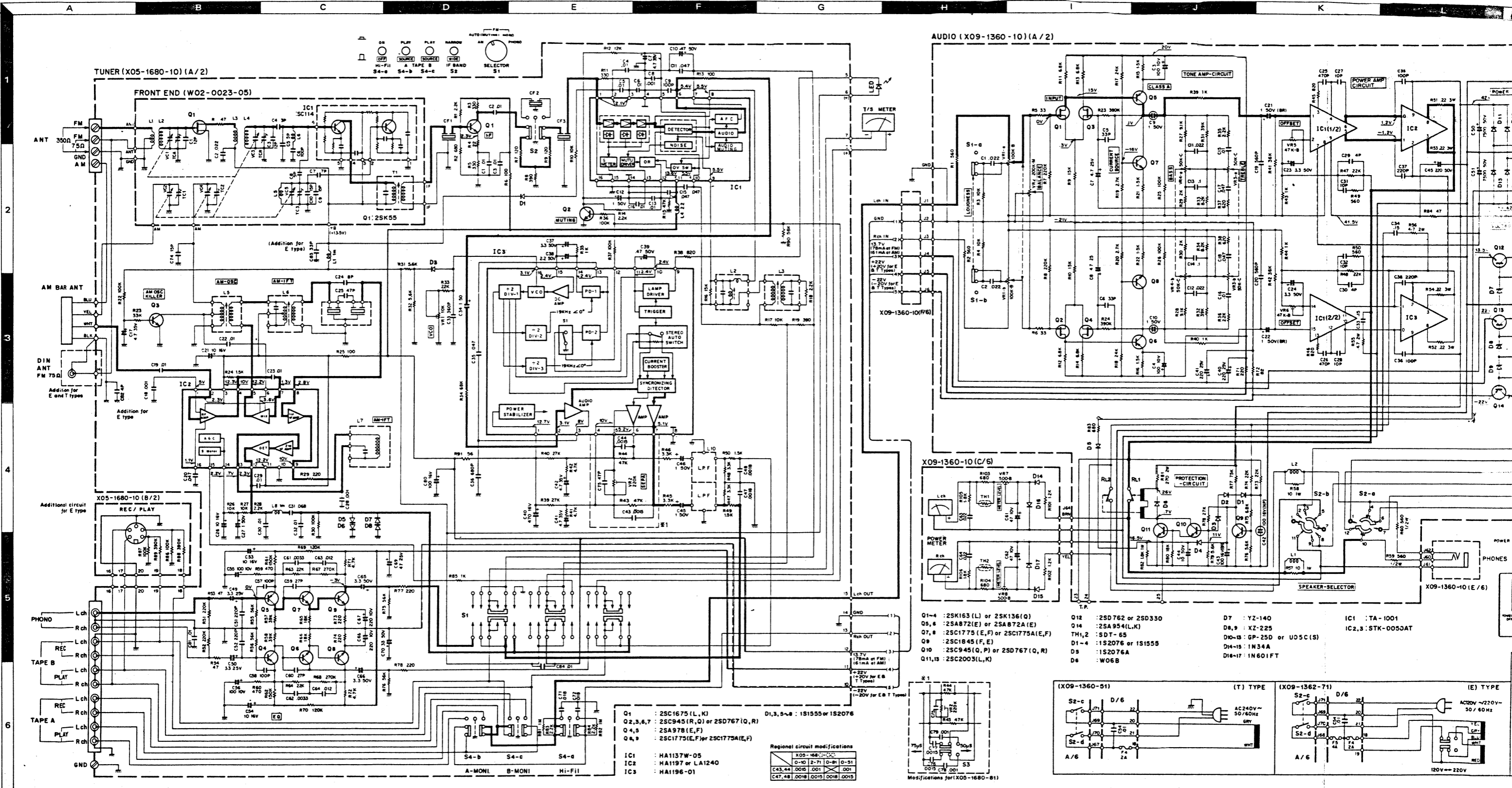
GENERAL

Power Consumption	280 W (IEC)
	3A (UL & CSA)
	180 W (8 ohms at Rated Power)
	27.5W (Non Signal)
A.C. Outlet	Switched 1, Unswitched 1
Dimensions	
	W: 471 mm (18-1/2")
	H: 139 mm (5-1/2")
	D: 358 mm (14-1/8")
Weight (Net)	18.3 lb (8.3 kg)

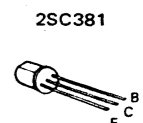
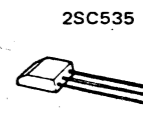
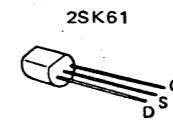
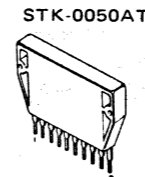
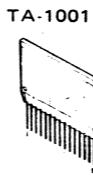
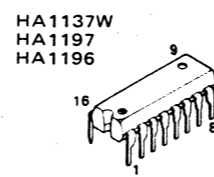
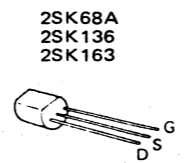
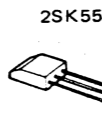
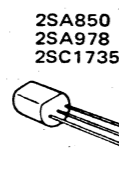
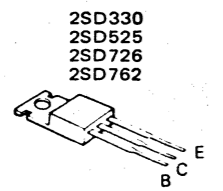
Note:

Kenwood follows a policy of continuous advancements in development. For this reason, specifications may be changed without notice.

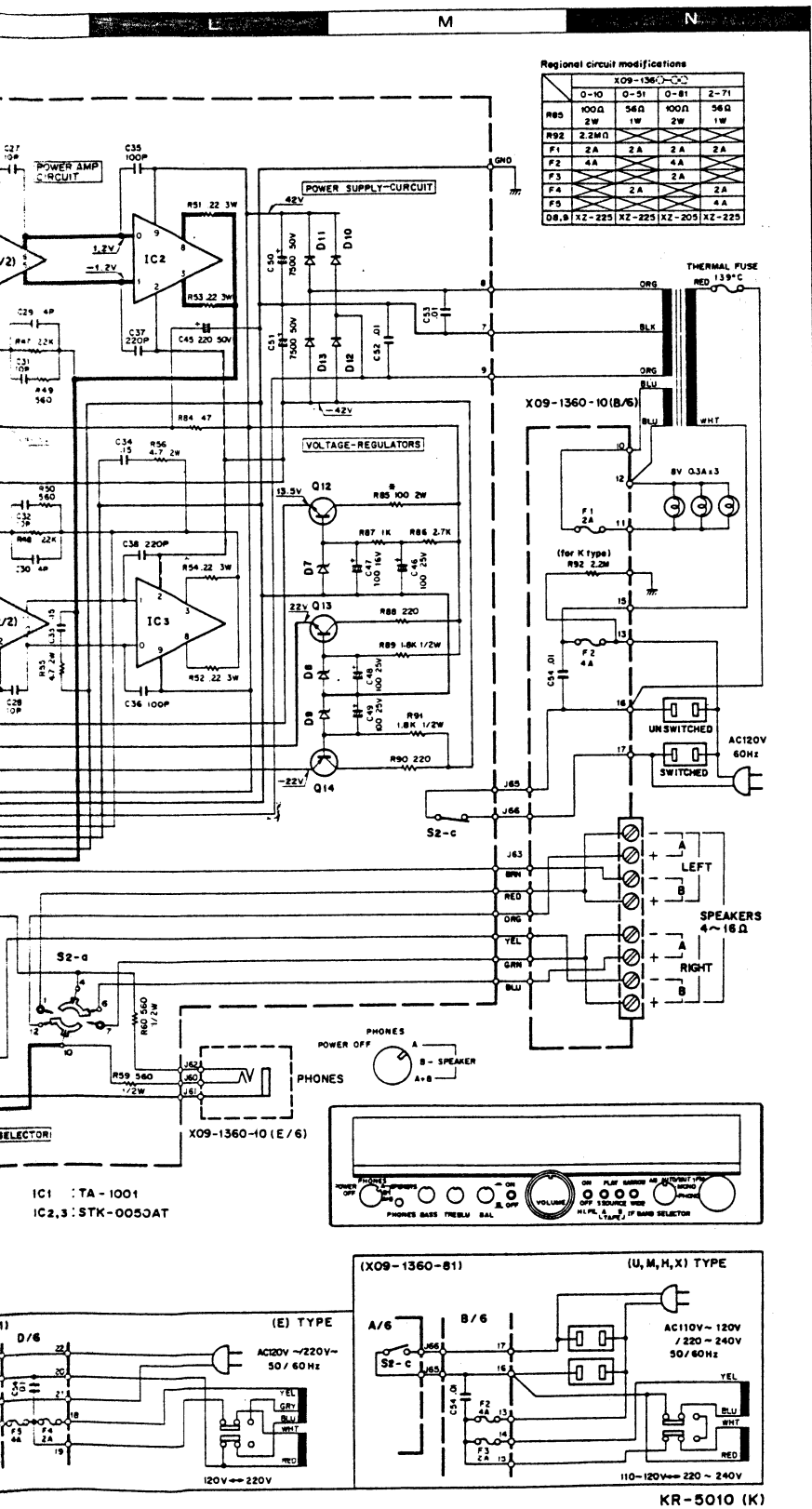
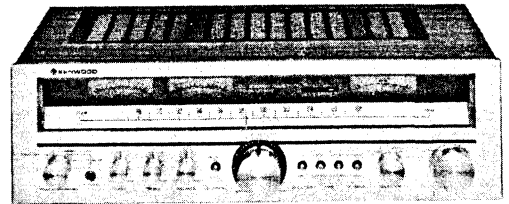




- 2SA640
- 2SA750
- 2SA777
- 2SA872
- 2SA872A
- 2SA954
- 2SC945
- 2SC1222
- 2SC1400
- 2SC1509
- 2SC1675
- 2SC1775
- 2SC1775A
- 2SC1845
- 2SC1890
- 2SC1890A
- 2SC2003
- 2SD767



(KR-5510) KR-5010



AMPLIFIER SECTION

Power Output

45 watts* per channel, minimum RMS at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion.

- Both Channels Driven 50 + 50 watts 8 ohms at 1,000 Hz
- 52 + 52 watts 4 ohms at 1,000 Hz
- Dynamic Power Output 190 watts 4 ohms
- Total Harmonic Distortion 0.03% at rated power into 8 ohms
- 0.009% at 1/2 rated power into 8 ohms
- Intermodulation Distortion 0.02% at rated power into 8 ohms
- (60 Hz : 7 kHz = 4 : 1)
- Power Bandwidth 7 Hz to 35,000 Hz
- Damping Factor 28 at 8 ohms
- Speaker Impedance Accept 4 ohms to 16 ohms
- Input Sensitivity/Impedance/Signal to Noise ratio (IHF A Curve)
- Phono 2.5 mV/50 kohms/82 dB
- Tape 150 mV/50 kohms/105 dB
- Maximum Input Level for Phono 140 mV (rms), T.H.D. 0.03% at 1,000 Hz
- Output Level/Impedance
- Tape REC (Pin) 150 mV/300 ohms
- (DIN) 30 mV/80 kohms
- Frequency Response
- Phono RIAA standard curve(20Hz to 20kHz) ± 0.3dB
- Tape 5 Hz to 170,000 Hz + 0.5 dB, - 3.0 dB
- Tone Control
- Bass ± 8 dB at 100 Hz
- Treble ± 8 dB at 10,000 Hz
- Loudness Control (- 30 dB) 10 dB at 100 Hz
- High Filter - 3 dB at 3 kHz

FM TUNER SECTION (IHF)

- Usable Sensitivity 10.3 dBf (1.8μV)
- 50 dB Quieting Sensitivity
- (Mono) 16.1 dBf (3.5μV)
- (Stereo) 37.9 dBf (43μV)
- Signal to Noise Ratio at 65 dBf
- (Mono) 76 dB
- (Stereo) 70 dB (72 dB at 85 dBf)
- T.H. Distortion at 65 dBf
- (Mono) 0.08%
- (Stereo) 0.09%
- Frequency Response 30 Hz to 15,000 Hz + 0.5 dB, - 2.0 dB
- Capture Ratio 1.0 dB
- Alternate Channel Selectivity 50 dB Wide at 400 kHz
- Spurious Response Ratio 80 dB
- Image Response Ratio 53 dB
- IF Response Ratio (Balanced) 90 dB
- AM Suppression Ratio 65 dB (at 65dBf)
- Stereo Separation 48 dB at 1,000 Hz Wide
- 40 dB at 100 Hz to 10,000 Hz Wide
- Sub Carrier Product Ratio 50 dB
- Antenna Impedance 300 ohms and 75 ohms
- FM Frequency Range 88 MHz to 108 MHz

AM TUNER SECTION

- Usable Sensitivity 10μV
- Signal to Noise Ratio 52 dB
- Image Rejection 50 dB
- Selectivity 50 dB

GENERAL

- Power consumption 330 W (IEC)
- 3.5 A (UL & CSA)
- 210 W (8 ohms at Rated Power)
- 27.5 W (Non Signal)
- A.C. Outlet Switched 1, Unswitched 1
- Dimensions W: 471 mm (18-1/2")
- H: 139 mm (5-1/2")
- D: 358 mm (14-1/8")
- Weight (Net) 19.0 lb (8.6 kg)

* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

DC voltages are measured with 20 kΩ/v VOM.

2SC381



PARTS LIST

See instructions at the end of the parts list.

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考	Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考	
KR-4010, 5010, 5510 (UNIT)								
1	1B	-		17	3A	B10-0247-04	FRONT GLASS	*
2	1B	-		18	1A	B19-0206-02	LIGHTING PLATE	*
3	3B	-		19	2A	B20-0445-02	DIAL CALIBRATIONS	*K
4	1B	-		19	2A	B20-0445-02	DIAL CALIBRATIONS	PM
5	3B	-		19	2A	B20-0445-02	DIAL CALIBRATIONS	TX
-		351-0003-14		19	2A	B20-0445-02	DIAL CALIBRATIONS	UE
7	1A	A03-0242-03		19	2A	B20-0446-02	DIAL CALIBRATIONS	SKR4010
7	1A	A03-0242-03		19	2A	B20-0450-02	DIAL CALIBRATIONS	*
7	1A	A03-0242-03		19	2A	B20-0450-02	DIAL CALIBRATIONS	*H
7	1A	A03-0242-03		20	3A	B21-0034-04	DIAL POINTER	*
7	1A	A03-0243-03		21	2A	B30-0182-15	LED	*
7	1A	A03-0246-03		22	2A	B30-0192-05	LAMP 0.3A X2	*
8	3A	A20-1431-03		23	2A	B30-0193-05	LAMP 0.3A	*
8	3A	A20-1431-03		24	2A	B31-0303-05	T/S METER (KR-5010)	*
8	3A	A20-1431-03		25	2A	B31-0304-05	POWER METER X2(KR-5010)	*
8	3A	A20-1431-03		26	1A	B31-0305-05	T METER (KR-4010)	*
8	3A	A20-1431-03		27	1A	B31-0306-05	S METER (KR-4010)	*
8	3A	A20-1432-03		28	2B	D15-0164-04	PULLEY	
8	3A	A20-1433-03		29	2A	D15-0174-05	PULLEY X2	
8	3A	A20-1437-03		30	3B	D15-0175-05	PULLEY X3	*
8	3A	A20-1437-03		31	2B	D20-0502-13	DIAL SHAFT	
8	3A	A20-1437-03		32	1B	E03-0008-05	AC OUTLET X2	KP
8	3A	A20-1437-03		32	1B	E03-0017-05	AC OUTLET X2	MX
8	3A	A20-1437-03		32	1B	E03-0017-05	AC OUTLET X2	UH
8	3A	A20-1437-03		33	1B	E04-0004-05	RECEPTACLE	TE
8	3A	A20-1438-03		34	1B	E30-0181-05	POWER CORD	KP
9	2A	A30-0169-08		34	1B	E30-0185-05	POWER CORD	X
-		B46-0055-20		34	1B	E30-0459-05	POWER CORD	EH
-		B46-0060-00		34	1B	E30-0545-05	POWER CORD	ME
-		B46-0061-20		34	1B	E30-0602-05	POWER CORD	T
-		B46-0062-20						
-		B46-0063-00		35	2B	G01-0045-24	COIL SPRING	
-		B46-0064-00		-		H01-3029-04	CARTON BOX (KR-5010)	*K
-		B50-1864-00		-		H01-3029-04	CARTON BOX (KR-5010)	MX
-		B50-1864-00		-		H01-3029-04	CARTON BOX (KR-5010)	U
-		B50-1865-00		-		H01-3030-04	CARTON BOX (KR-5010)	*P
-		B50-1865-00		-		H01-3031-04	CARTON BOX (KR-5010)	*T
-		B50-1866-00		-		H01-3032-04	CARTON BOX (KR-5510)	*H
-		B50-1867-00		-		H01-3033-04	CARTON BOX (KR-4010)	*K
-		B50-1868-00		-		H01-3033-04	CARTON BOX (KR-4010)	MX
-		B59-0018-00		-		H01-3033-04	CARTON BOX (KR-4010)	U
10	3A	B01-0140-04		-		H01-3034-04	CARTON BOX (KR-4010)	*P
10	3A	B01-0140-04		-		H01-3035-04	CARTON BOX (KR-4010)	*T
10	3A	B01-0140-04		-		H01-3048-04	CARTON BOX (KR-4010)	*E
10	3A	B01-0140-04		-		H01-3049-04	CARTON BOX (KR-5010)	*E
10	3A	B01-0141-04		-		H10-1534-02	POLYSTYRENE FIXTURE X1	*
11	3A	B01-0142-04		-		H20-0417-04	COVER	M
11	3A	B01-0142-04		-		H20-0454-04	COVER	KP
11	3A	B01-0142-04		-		H20-0454-04	COVER	TX
11	3A	B01-0142-04		-		H20-0454-04	COVER	UE
11	3A	B01-0143-04		-		H20-0454-04	COVER	H
12	1A	B04-0067-04		-		H25-0078-04	BAG	
12	1A	B04-0067-04		36	3B	J02-0103-05	FOOT X4	*
12	1A	B04-0067-04		37	2A	J19-0306-05	LEAD HOLDER	
12	1A	B04-0067-04		38	1B	J19-0507-05	ANTENNA HOLDER	
12	1A	B04-0071-04		39	3A	J32-0254-14	HEX BOSS	*
12	1A	B04-0072-04		40	1B	J41-0034-05	POWER CORD BUSHING	KP
13	3A	B07-0279-04		40	1B	J42-0083-05	POWER CORD BUSHING	MU
14	3A	B07-0280-04		40	1B	J42-0084-05	POWER CORD BUSHING	EH
15	3A	B07-0281-04		40	1B	J42-0085-05	POWER CORD BUSHING	TX
15	3A	B07-0281-04		41	2A	J61-0045-15	WIRE BAND	
16	2A	B08-0007-04		42	3A	J90-0093-04	RAIL	*

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考	Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
43 3A	K23-0327-04	KNOB (TUNING)	*	C1	C55-1710-38	CERAMIC 0.01UF Z	#1
44 2B	K27-0096-04	KNOB(PUSH) X3	*	C2	C55-1710-38	CERAMIC 0.01UF Z	
45 2A	K27-0097-04	KNOB(PUSH)	*	C3	C55-1710-38	CERAMIC 0.01UF Z	
46 2B	K27-0098-04	KNOB(PUSH) (KR-5010)	*	C7	C24-6547-51	ELECTRO 4.7UF 35WV	
47 3A	K29-0309-04	KNOB (VOLUME)	*	C8	C52-1710-26	CERAMIC 0.001UF K	
48 3A	K29-0310-04	KNOB (SEL. POWER) X2	*	C9	C71-1710-15	CERAMIC 100PF J	
49 3A	K29-0311-04	KNOB (TONE, BALANCE) X3	*	C10	C24-1747-41	ELECTRO 0.47UF 50WV	
50 1B	L01-1761-05	POWER TRANS. (KR-5010)	*K	C11	C55-1747-38	CERAMIC 0.047UF Z	
50 1B	L01-1762-05	POWER TRANS. (KR-5010)	*T	C12	C24-1710-51	ELECTRO 1UF 50WV	
50 1B	L01-1765-05	POWER TRANS. (KR-5010)	*U	C13	C55-1710-38	CERAMIC 0.01UF Z	
50 1B	L01-1765-05	POWER TRANS. (KR-5010)	MX	C14	C55-1747-38	CERAMIC 0.047UF Z	
50 1B	L01-1765-05	POWER TRANS. (KR-5510)	H	C16	C55-1710-38	CERAMIC 0.01UF Z	
50 1B	L01-1766-05	POWER TRANS. (KR-5010)	*E	C17	C24-6547-51	ELECTRO 4.7UF 35WV	
50 1B	L01-1767-05	POWER TRANS. (KR-5010)	*P	C18	C52-1710-26	CERAMIC 0.001UF K	
50 1B	L01-1771-05	POWER TRANS. (KR-4010)	*K	C19	C55-1710-38	CERAMIC 0.01UF Z	
50 1B	L01-1772-05	POWER TRANS. (KR-4010)	*T	C20	C55-1747-38	CERAMIC 0.047UF Z	
50 1B	L01-1775-05	POWER TRANS. (KR-4010)	*U	C21	C24-1210-61	ELECTRO 10UF 16WV	
50 1B	L01-1775-05	POWER TRANS. (KR-4010)	MX	C22	C90-0245-05	CERAMIC 0.01UF M	
50 1B	L01-1776-05	POWER TRANS. (KR-4010)	*E	C23	C55-1710-38	CERAMIC 0.01UF Z	
50 1B	L01-1777-05	POWER TRANS. (KR-4010)	*P	C24	C71-1708-02	CERAMIC 8PF D	
51A 1B	N08-0128-35	GND SCREW		C25	C71-1747-05	CERAMIC 47PF J	
51B 1B	N09-0303-05	SCREW M3X6		C26	C24-1210-61	ELECTRO 10UF 16WV	
51C 1A	N09-0308-05	SCREW M4X12(BLACK)		C27	C24-1710-51	ELECTRO 1UF 50WV	
52 1B	S31-2050-05	SLIDE SWITCH	MX	C28	C52-1710-26	CERAMIC 0.001UF K	
52 1B	S31-2050-05	SLIDE SWITCH	UE	C29	C90-0245-05	CERAMIC 0.01UF M	
52 1B	S31-2050-05	SLIDE SWITCH	H	C31	C46-1768-36	MYLAR 0.068UF K	
53 2B	S90-0020-05	SWITCH SHAFT (KR-5010)	*	C32	C90-0245-05	CERAMIC 0.01UF M	
53 2B	S90-0022-05	SWITCH SHAFT (KR-4010)	*	C33	C48-1736-15	POLYSTY 360PF J	
54 1B	T90-0083-05	AM ANTENNA		C34	C24-1710-51	ELECTRO 1UF 50WV	
55 1A	T90-0202-05	FM ANTENNA		C35	C46-1747-36	MYLAR 0.047UF K	
56 2B	X05-1680-10	TUNER PCB ASSY(KR-5010)	*K	C36	C52-1768-16	CERAMIC 680PF K	
56 2B	X05-1680-10	TUNER PCB ASSY(KR-5010)	P	C37	C24-1722-51	ELECTRO 3.3UF 50WV	
56 2B	X05-1680-11	TUNER PCB ASSY(KR-4010)	*K	C38	C24-1722-51	ELECTRO 2.2UF 50WV	
56 2B	X05-1680-11	TUNER PCB ASSY(KR-4010)	P	C39	C24-1747-41	ELECTRO 0.47UF 50WV	
56 2B	X05-1680-51	TUNER PCB ASSY(KR-5010)	*T	C40	C24-1247-71	ELECTRO 470UF 16WV	
56 2B	X05-1680-51	TUNER PCB ASSY(KR-5010)	X	C41	C24-6547-51	ELECTRO 4.7UF 35WV	
56 2B	X05-1680-52	TUNER PCB ASSY(KR-4010)	*T	C43	C46-1710-25	MYLAR 0.001UF J	
56 2B	X05-1680-52	TUNER PCB ASSY(KR-4010)	X	C44	C46-1715-25	MYLAR 0.0015UF J	
56 2B	X05-1680-81	TUNER PCB ASSY(KR-5010)	*M	C45	C24-1710-51	ELECTRO 1UF 50WV	
56 2B	X05-1680-81	TUNER PCB ASSY(KR-5010)	UH	C47	C46-1715-25	MYLAR 0.0015UF J	
56 2B	X05-1680-82	TUNER PCB ASSY(KR-4010)	*M	C49	C46-1718-25	MYLAR 0.0018UF J	
56 2B	X05-1680-82	TUNER PCB ASSY(KR-4010)	U	C51	C25-1433-57	LL-ELEC 3.3UF 25WV	
56 2B	X05-1682-71	TUNER PCB ASSY(KR-5010)	*E	C53	C71-1722-15	CERAMIC 220PF J	
56 2B	X05-1682-72	TUNER PCB ASSY(KR-4010)	*E	C55	C24-1210-61	ELECTRO 10UF 16WV	
57 2B	X09-1360-10	AUDIO PCB ASSY(KR-5010)	*K	C57	C24-1010-71	ELECTRO 100UF 10WV	
57 2B	X09-1360-10	AUDIO PCB ASSY(KR-5010)	P	C59	C71-1710-15	CERAMIC 100PF J	
57 2B	X09-1360-11	AUDIO PCB ASSY(KR-4010)	*K	C61	C71-1727-05	CERAMIC 27PF J	
57 2B	X09-1360-11	AUDIO PCB ASSY(KR-4010)	P	C63	C46-1733-25	MYLAR 0.0033UF J	
57 2B	X09-1360-51	AUDIO PCB ASSY(KR-5010)	*T	C65	C46-1712-35	MYLAR 0.012UF J	
57 2B	X09-1360-52	AUDIO PCB ASSY(KR-4010)	*T	C67	C24-1722-51	ELECTRO 3.3UF 50WV	
57 2B	X09-1360-81	AUDIO PCB ASSY(KR-5010)	*M	C69	C24-1022-71	ELECTRO 220UF 10WV	
57 2B	X09-1360-81	AUDIO PCB ASSY(KR-5010)	XU	C70	C24-1447-61	ELECTRO 47UF 25WV	
57 2B	X09-1360-81	AUDIO PCB ASSY(KR-5010)	H	C71	C24-1433-61	ELECTRO 33UF 25WV	
57 2B	X09-1360-82	AUDIO PCB ASSY(KR-4010)	*M	C73	C46-1718-36	MYLAR 0.018UF K	
57 2B	X09-1360-82	AUDIO PCB ASSY(KR-4010)	XU	C74	C24-1010-71	ELECTRO 100UF 10WV	
57 2B	X09-1362-71	AUDIO PCB ASSY(KR-5010)	*E	C75	C70-1715-05	CERAMIC 15PF J	
57 2B	X09-1362-72	AUDIO PCB ASSY(KR-4010)	*E	C76	C71-1747-05	CERAMIC 47PF J	
101 3B		METALLIC FRAME		C77	C46-1715-25	MYLAR 0.0015UF J	#2
				C78	C46-1710-25	MYLAR 0.001UF J	
				C80	C24-1210-71	ELECTRO 100UF 16WV	U U
				C81	C55-1710-38	CERAMIC 0.01UF Z	
				C82	C71-1704-01	CERAMIC 4PF C	E

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考	Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
C23 ,24	C24-1733-51	ELECTRO 3.3UF 50WV		C83	C71-1733-05	CERAMIC 33PF J	E
C25 ,26	C52-1747-16	CERAMIC 470FF K		C84	C55-1710-38	CERAMIC 0.01UF Z	
C27 ,28	C71-1710-02	CERAMIC 10PF D		104 1B	E06-0510-05	DIN CONNECTOR	E
C29 ,30	C71-1704-01	CERAMIC 4PF C		105 2B	E13-0423-05	PHONE JACK (4P)	
C31 ,32	C71-1710-02	CERAMIC 10PF D		106 2B	E13-0612-05	PHONE JACK (6P)	
C33 ,34	C46-1715-47	MYLAR 0.15UF M		107 1B	E20-0439-05	TERMINAL BOARD	*
C35 ,36	C71-1710-15	CERAMIC 100PF J		CF1 ,3	L72-0052-15	FM CERAMIC FILTER	K2
C37 ,38	C71-1722-15	CERAMIC 220P J		CF1 ,3	L72-0052-15	FM CERAMIC FILTER	U2
C40 ,41	C24-1422-71	ELECTRO 220UF 25WV		CF1 ,3	L72-0059-05	FM CERAMIC FILTER	T2
C42	C26-1210-77	NP-ELEC 100UF 16WV		CF1 ,3	L72-0059-05	FM CERAMIC FILTER	E2
C43	C25-1210-77	LL-ELEC 100UF 16WV	*	CF1 -3	L79-0102-05	FM CERAMIC FILTER ASSY*	#1
C44	C24-1710-61	ELECTRO 10UF 50WV		CF4	L72-0078-05	AM CERAMIC FILTER	
C45	C24-1722-71	ELECTRO 220UF 50WV		L1	L40-1021-45	INDUCTOR 1MH	
C46	C24-1410-71	ELECTRO 100UF 25WV		L2	L30-0316-05	FM IFT	
C47	C24-1210-71	ELECTRO 100UF 16WV		L3	L30-0317-05	FM IFT	
C48 ,49	C24-1410-71	ELECTRO 100UF 25WV		L4	L40-2292-44	INDUCTOR 2.2UH	
C50 ,51	C90-0338-05	ELECTRO 6800UF 42WV	#2	L5	L32-0225-05	MW OSCILLATING COIL	
C50 ,51	C90-0359-05	ELECTRO 7500UF 50WV	#1	L6	L30-0329-05	AM IFT	
C52 ,53	C54-2710-39	CERAMIC 0.01UF P	ET	L7	L30-0284-05	AM IFT	
C54	C51-3310-39	CERAMIC 0.01UF P	ET	L8	L40-1021-45	INDUCTOR 1MH	
C54	C91-0023-05	CERAMIC 0.01UF	U	L10	L79-0072-05	LC FILTER	
C54	C91-0079-05	CERAMIC 0.01UF	K	R6	R43-1210-15	FL-PROOF RD100 J 2E	
C61 ,62	C24-1047-61	ELECTRO 47UF 10WV	#1	R25	R43-1210-15	FL-PROOF RD100 J 2E	
C63 ,64	C46-1722-36	MYLAR 0.022UF K	#1	R73 ,74	R40-8322-16	RC 220 K 2H	ET
115 2A	E11-0060-15	PHONE JACK		R91	R43-1256-05	FL-PROOF RD56 J 2E	
116 1B	E20-0812-05	TERMINAL BOARD (8P)		VR1	R12-3045-05	TRIMMING POT. 10KOHM(B)	
-	F01-0294-04	HEAT SINK (2SD762)		VR2	R12-5031-05	TRIMMING POT. 220KOHM(B)	
-	F09-0033-05	CAPACITOR COVER	ET	S1	S90-0019-05	SLIDE SWITCH FIG201	#1
118 2B	F01-0308-03	HEAT SINK	#1	S1	S90-0021-05	SLIDE SWITCH FIG201	#2
118 2B	F01-0309-03	HEAT SINK	#2	S2	S40-2087-05	PUSH SWITCH FIG202	#1
F1	F05-2021-05	FUSE UL 2A	K	S3	S31-2052-05	SLIDE SWITCH(EMPHASIS)	U
F1	F05-2023-05	FUSE 2A	U	S4	S42-3029-05	PUSH SWITCH FIG203	*
F1	F05-2029-05	FUSE SEMKO 2A	ET	D1	V11-0076-05	1S1555, 1S2076	
F2	F05-4021-05	FUSE 4L 4A	K	D2	V11-0076-05	1S1555	#2
F3	F05-2023-05	FUSE 2A	U	D3	V11-0076-05	1S1555, 1S2076	
F4	F05-2029-05	FUSE SEMKO 2A	ET	D5 -8	V11-0076-05	1S1555, 1S2076	
F5	F05-4024-05	FUSE SEMKO 4A	E	IC1	V30-0192-05	HA1137W-05	
-	J13-0041-05	FUSE CLIP X4	K	IC2	V30-0196-05	HA1197	
-	J13-0041-05	FUSE CLIP X6	U	IC3	V30-0193-05	HA1196-01	
-	J13-0054-05	FUSE CLIP X4	T	Q1	V03-1675-10	2SC1675(L, K)	
-	J13-0054-05	FUSE CLIP X6	E	Q2 ,3	V03-0270-05	2SC945(R, Q), 2SD767(Q, R)	
121 2A	J32-0253-14	HEX BOSS	*	Q4 ,5	V01-0978-40	2SA978(E, F)	
L1 ,2	L39-0085-05	COIL		Q6 ,7	V03-0270-05	2SC945(R, Q), 2SD767(Q, R)	
122 2B	N09-0309-05	SCREW X6	*	Q8 ,9	V03-0477-05	2SC1775(E, F) 2SC1775A IEF	
R51 -54	R92-0113-05	METAL PLATE0.33 3W	#2	108 2B	W02-0023-05	FM FRONT END	*
R51 -54	R92-0167-05	METAL PLATE0.22 3W	#1	AUDIO (X09-136)			
R55 ,56	R47-5547-95	FL-PROOF RS4.7 J 3D		111 2A	-	MAIN CHASSIS	
R57 ,58	R47-5410-05	FL-PROOF RS10 J 3A		112 2B	-	MOUNTING HARDWARE	
R59 ,60	R40-8356-16	RC 560 K 2H		C1 ,2	C46-1722-36	MYLAR 0.022UF K	
R71	R43-1222-15	FL-PROOF RD220 J 2E		C3 ,4	C24-1010-71	ELECTRO 100UF 10WV	
R72	R43-1282-05	FL-PROOF RD82 J 2E		C5 ,6	C71-1733-05	CERAMIC 33PF J	
R81	R47-5522-15	FL-PROOF RS220 J 3D	#2	C7 ,8	C24-1447-51	ELECTRO 4.7UF 25WV	
R81	R47-5527-15	FL-PROOF RS270 J 3D	#1	C9 ,10	C26-1710-51	NP-ELEC 1UF 50WV	
R82	R47-5418-25	FL-PROOF RS1.8K J 3A		C11 ,12	C46-1722-36	MYLAR 0.022UF K	
R83	R43-1268-15	FL-PROOF RD680 J 2E		C13 ,14	C46-1710-46	MYLAR 0.1UF K	
R84	R43-1247-05	FL-PROOF RD47 J 2E		C15 ,16	C46-1710-36	MYLAR 0.01UF K	
R85	R47-5510-15	FL-PROOF RS100 J 3D	KU	C17 ,18	C46-1747-36	MYLAR 0.047UF K	
R85	R92-0200-05	FL-PROOF RS56 3A	ET	C19 ,20	C52-1756-16	CERAMIC 560PF K	
R88	R43-1210-15	FL-PROOF RD100 J 2E	#2	C21 ,22	C25-1710-57	LL-ELEC 1UF 50WV	

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
R88	R43-1222-15	FL-PROOF RD220 J 2E	#1
R90	R43-1210-15	FL-PROOF RD100 J 2E	#2
R90	R43-1222-15	FL-PROOF RD220 J 2E	#1
R91	R40-8315-24	RC 1.5K K 2H	#2
R91	R40-8318-24	RC 1.8K K 2H	#1
R92	R92-0173-05	RESISTOR 2.2M 2H	K
VR1	R06-5041-05	POTENTIOMETER 100K(B)X2	*
VR2	R01-5025-05	POTENTIOMETER 200K(M)	*
VR3 , 4	R06-4041-05	POTENTIOMETER 50K(C)X2	*
VR5 , 6	R12-3042-05	TRIMMING POT. 47K(B)	
VR7 , 8	R12-0047-05	TRIMMING POT. 500(B)	#1
RL1 , 2	S51-1025-05	RELAY (DC-PROTECTION)	*
S1	S40-2084-05	PUSH SWITCH FIG211	
S2	S02-1016-05	ROTARY SWITCH FIG212*	K
S2	S02-1017-05	ROTARY SWITCH FIG212*	U
S2	S02-1018-05	ROTARY SWITCH FIG212	ET
D1 -4	V11-0271-05	1S2074, 1S1555	
D5	V11-0273-05	1S2076A	
D6	V11-0295-05	W06B	
D7	V11-0254-05	YZ-140	
D9	V11-4105-20	XZ-225	KT
D9	V11-4105-20	XZ-225	E
D9	V11-4105-30	XZ-205	U
D10 -13	V11-2100-10	U05C(S), 6P-25D	#1
D14 , 15	V11-0400-05	IN34A	#1
D16 , 17	V11-0423-05	IN601FT	#1
IC1	V30-0338-10	TA1001 (VOLTAGE AMP)	*
IC2 , 3	V30-0339-10	STK-0040AT (POWER IC) *	#2
IC2 , 3	V30-0340-10	STK-0050AT (POWER IC) *	#1
Q1 -4	V09-0149-30	2SK136(Q), 2SK163(L)	
Q5 , 6	V01-0189-05	2SA872(E), 2SA872A(E)	
Q7 , 8	V03-1775-00	2SC1775(E, F) 2SC1775A(EF)	
Q9	V03-1845-10	2SC1845(F, E)	
Q10	V03-0343-05	2SC945(Q, P), 2SD767(Q, R)	
Q11	V03-2003-30	2SC2003(L, K)	
Q12	V04-0762-00	2SD762, 2SD330	
Q13	V03-2003-30	2SC2003(L, K)	
Q14	V01-0954-10	2SA954(L, K)	
TH1 , 2	V22-0006-05	SDT-65 (METER)	#1
C1	C71-1712-06	CERAMIC 12PF K	
C2	C55-1722-38	CERAMIC 0.022UF Z	
C3	C71-1712-06	CERAMIC 12PF K	
C4	C71-1703-02	CERAMIC 3PF D	
C5	C71-1705-02	CERAMIC 5PF D	
C6	C71-1710-16	CERAMIC 100PF K	
C7	C71-1707-02	CERAMIC 7PF D	
C8	C71-1705-91	CERAMIC 0.5PF C	
C9 , 10	C66-1715-02	CERAMIC 15PF D	
TC1 , 2	C05-0071-00	TRIMMER CAPACITOR	
TC3	C05-0075-00	TRIMMER CAPACITOR	
L6	L33-0273-00	CHOKO COIL	*
T1	L30-0325-00	IFT	*
IC1	V30-0345-10	SC114	*
Q1	V09-0071-05	2SK55	

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
①	14 3A	A20-1391-13	FRONT PANEL PANEL
②	14 3A	A20-1417-13	FRONT PANEL ASSY
③	15 3A	A21-0302-03	DRESSING PANEL
④	15 3A	A21-0302-03	DRESSING PANEL
⑤	C1 .C2	C54-3310-39	CERAMIC 0.01UF F
	C1	C90-0145-05	POLYESTER 0.01UF AC125V
	C1	C91-0023-05	CERAMIC 0.01UF AC250V
	C1	C91-0023-05	CERAMIC 0.01UF AC250V
	C1	C91-0025-05	CERAMIC 0.01UF AC125V
	28 1E	D15-0155-13	PULLEY
	29 1E	D15-0156-13	PULLEY
	30 2A	D15-0170-14	PULLEY
	31 2A	D20-0144-03	DIAL SHAFT

- ① Exploded view drawing No.
- ② Position in exploded view.
- ③ Symbol of new parts
- ④ Area to which parts are shipped. Example: A20-1390-13 is the part No. of FRONT PANEL ASS'Y for the "K" type products (for U.S.A.).
When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.
CODEs in X05-1680-10
#1: K1, E1, U1 & T1 (KR-5010)
#2: K2, E2, U2 & T2 (KR-4010)
K: X05-1680-10 & X05-1680-11
E: X05-1682-71 & X05-1682-72
U: X05-1680-81 & X05-1680-82
T: X05-1680-51 & X05-1680-52
K1: X05-1680-10
K2: X05-1680-11
E1: X05-1682-71
E2: X05-1682-72
U1: X05-1680-81
U2: X05-1680-82
T1: X05-1680-51
T2: X05-1680-52
- CODEs in X09-1360-10
#1: K1, E1, U1 & T1 (KR-5010)
#2: K2, E2, U2 & T2 (KR-4010)
K: X09-1360-10 & X09-1360-11
E: X09-1362-71 & X09-1362-72
U: X09-1360-81 & X09-1360-82
T: X09-1360-51 & X09-1360-52
- ⑤ Reference No. in schematic diagram.
- ⑥ Abbreviation of "ceramic capacitor".
All capacitors and resistors are listed using abbreviations.
- ⑦ Abbreviations
* Abbreviations of capacitors (Parts No. with initial letter "C").
ELECTRO Electrolytic capacitor
LL-ELEC Low leak electrolytic capacitor
NP-ELEC Non-pole electrolytic capacitor
MICA Mica capacitor
POLYSTY Polystyrene capacitor

PARTS LIST/SEMICONDUCTOR SUBSTITUTIONS/IC CIRCUIT SCHEMATICS

MYLAR Mylar capacitor
 CERAMIC Ceramic capacitor
 TANTAL Tantalum capacitor
 MF Metallized film capacitor
 OIL Oil capacitor
 The unit "UF" is used in lieu of "μF".

* Abbreviations of resistors (Parts No. with initial letters "R").

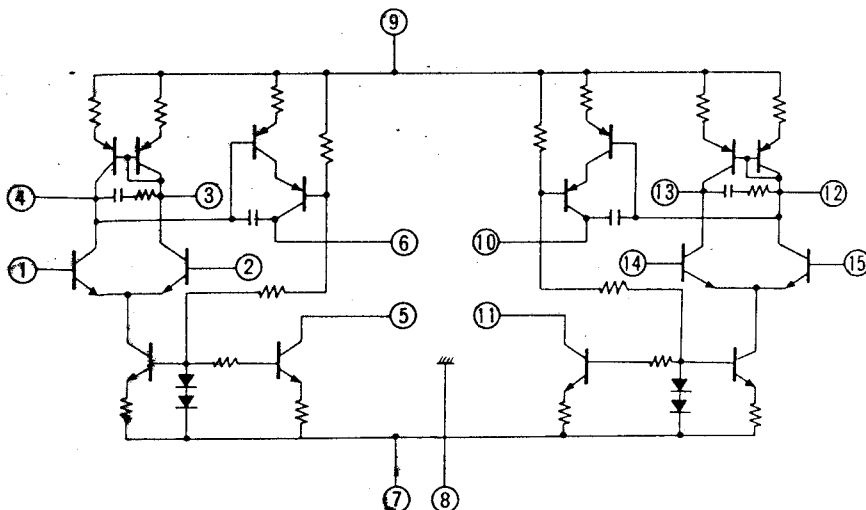
RC Carbon composition resistor
 RD Carbon film resistor
 FL-PROOF RD Flame-proof carbon film resistor
 RW Wire wound power resistor
 FL-PROOF RS Flame-proof metal oxide film resistor
 RN Metal film resistor
 2B Rated wattage 1/8W
 2E Rated wattage 1/4W
 2H Rated wattage 1/2W
 3A Rated wattage 1W
 3D Rated wattage 2W
 3F Rated wattage 3W
 3G Rated wattage 4W
 3H Rated wattage 5W
 All resistor values are indicated with the unit (Ω) omitted.

* Abbreviations common to capacitors and resistors.

C ±0.25pF (Used for capacitors only)
 D ±0.5pF (Used for capacitors only)
 F ±1%
 G ±2%
 J ±5%
 K ±10%
 M ±20%
 Z +80%, -20% (Used for capacitors only)
 P +100%, -0% (Used for capacitors only)

Ⓢ Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.

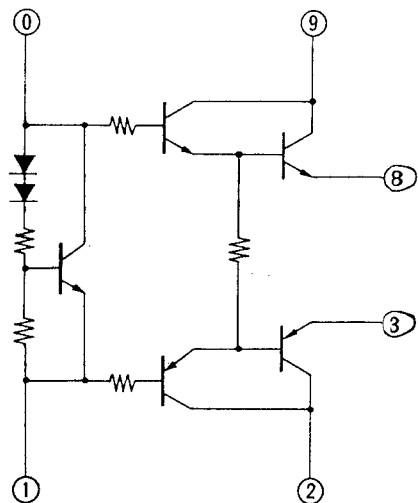
TA-1001



SEMICONDUCTOR SUBSTITUTIONS

Ref. No.	Semiconductor Name	Semiconductor Substitutions
W02-0023-05		
Q1	2SK55	2SK61(GR)
X05-1680-10		
Q1	2SC1675(L,K)	2SC535(B), 2SC381(O)
Q2,3,6,7	2SC945(R,Q), 2SD767(Q,R)	2SC1400(E,U) 2SC1775(E,F)
Q4,5	2SA978(E,F)	2SA872(E)
Q8,9	2SC1775(E,F), 2SC1775A(E,F)	2SC1222(E), 2SC1400(E,U)
X09-1360-10		
Q1~4	2SK163(L), 2SK136(Q)	2SK68A(M,N)
Q5,6	2SA872(E), 2SA872A(E)	2SA750(I) (E), 2SA640(E)
Q7,8	2SC1775(E,F), 2SC1775A(E,F)	2SC1400(E,U), 2SC1222(E,U)
Q9	2SC1845(F,E)	2SC1890(E,F), 2SC1890A(E,F)
Q10	2SC945(Q,P), 2SD767(Q,R)	2SC1400(E,U), 2SC1222(E,U) 2SC1400(E,U), 2SC1775(E,F)
Q11,13	2SC2003(L,K)	2SC1509(Q,R), 2SC1735(D,E)
Q12	2SD762, 2SD330	2SD726, 2SD525
Q14	2SA954(L,K)	2SA777(Q,R), 2SA850(D,E)

STK-0040 AT & STK-0050 AT



R-4010, 5010

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